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915. MARIAT (F.) & DROUHET (E.). **Sporotrichose expérimentale du Hamster. Observation de formes astéroïdes de Sporotrichum.** [Experimental sporotrichosis of the Hamster. Observation of asteroid forms of *Sporotrichum*.]—*Ann. Inst. Pasteur*, 86, 4, pp. 485–492, 1 pl., 1 fig., 1954.

The experimental inoculation of the golden hamster [*Mesocricetus auratus*] with *Sporotrichum schencki* may result either in chronic localized infection, expressed by gummatous lesions on the paws and testicles, or in general involvement of the internal organs culminating in death.

Histological studies revealed the evolution of the fungus from the typical navicular forms to asteroid elements or club-shaped grains [1, No. 841], apparently representing a defence reaction and differentiated by a mucoid substance secreted either by the fungus, the host tissues, or by both in competition.

916. FISCHER (J. B.). **The place of medical mycology in the hospital laboratory.**—*Canad. J. med. Tech.*, 15, 3, pp. 83–88, 1953.

In an attempt to encourage bacteriologists in hospital laboratories to search for pathogenic fungi in specimens received for culture, particularly if the diagnosis is obscure or fungal infection is suggested, the author indicates the types of material to be examined for the agents of common systemic or subcutaneous infections in Ontario and the mode of collection.

917. CONANT (N. F.), SMITH (D. T.), BAKER (R. D.), CALLAWAY (J. L.), & MARTIN (D. S.). **Manual of clinical mycology.** Second Edition.—xii+456 pp., 202 figs., 1954. Philadelphia & London: W. B. Saunders Co. 32*s*. 6*d*.

Since the first edition of this valuable manual appeared in 1944 [1, No. 645], many new facts have come to light concerning the epidemiology, immunology, therapy, and differential diagnosis of the mycoses, necessitating considerable amplification of the original material.

918. SIMONS (R. D. G. P.). **Medical mycology.**—pp. xiv+446, 4 pl., 306 figs. (1 col.), London, Cleaver-Hume Press Ltd., 1954. 55*s*.

This manual, representing the section on mycology of Volume II of the 'Handbook of Tropical Dermatology and Medical Mycology', is divided into 41 chapters dealing, respectively, with the development of medical mycology, by C. W. EMMONS (pp. 3–8); medical mycology (introduction), including a new and practical classification and a brief glossary of mycological terms taken from J. H. Swartz's 'Elements of medical mycology', 1949, by R. D. G. P. SIMONS and N. GOHAR (pp. 9–25); physiology of fungi (growth and reproduction), by J. H. SWARTZ (pp. 26–29); mycological technique, by F. REISS (pp. 30–49); experimental mycotic infections in laboratory animals, by F. REISS (pp. 50–65); trichophytosis of the smooth skin (tinea glabrosa), associated with *Trichophyton mentagrophytes*, *T. rubrum*, *T. schoenleini*, *T. tonsurans*,

T. verrucosum, *T. ferrugineum*, and *T. concentricum*, by L. Ajello (pp. 66–80); *Microsporum* infection of the smooth skin (*M. canis*, *M. audouini*, and *M. gypseum*), by Mary J. Marples (pp. 81–88); tinea imbricata (tokelau) caused by *T. concentricum*, by A. E. de Area Leao (pp. 89–99); tinea versicolor (*Malassezia furfur*), by X. Vilanova and C. Cardenal (pp. 100–110); tinea nigra (*Cladosporium mansoni* and *C. wernecki*), by J. A. Neves and O. G. Costa (pp. 111–120); so-called tinea albigena (of doubtful etiology), by R. D. G. P. Simons (pp. 121–128); epidermophytosis or athlete's foot, which may also involve the hands and is induced by *T.* spp., *Epidermophyton floccosum*, *Candida albicans*, and a number of other species, by F. Sagher (pp. 129–145); erythrasma (*Nocardia minutissima*), by A. González Ochoa (pp. 146–150); moniliasis (*C. albicans*), by T. Benedek (pp. 151–173); dermatophytids or allergic cutaneous eruptions secondary to infection by a species of *Trichophyton*, *Epidermophyton*, *Microsporum*, or *Candida*, by J. H. Tolmach and S. B. Frank (pp. 174–181); otomycosis or hot weather ear, in which various species may be implicated in either a primary or secondary capacity, by A. E. Thone (pp. 182–187); mycotic infection of the eye (*Aspergillus fumigatus*, various dermatophytes, *Actinomyces*, yeast-like organisms, etc.), by A. W. Thone (pp. 188–192); tinea capitis et barbae (*M.* and *T.* spp.), by Mary J. Marples (pp. 193–208); onychomycosis and onychomycotization, by R. D. G. P. Simons (pp. 209–210); onychomycosis, presenting a complex etiological problem critically discussed by T. Benedek (pp. 211–235); piedra and piedraia (*Trichosporon* spp.), by R. D. G. P. Simons (pp. 236–248); trichomycosis axillaris (leptothrix), attributed to *N. tenuis*, by R. D. G. P. Simons (pp. 249–251); introductory notes on the term 'blastomycoses', by J. W. Wilson and O. A. Plunkett (pp. 252–253); torulosis, cryptococcosis (European blastomycosis, Buschke's disease), due to *Cryptococcus neoformans*, by F. Piers (pp. 254–259); North American blastomycosis or Gilchrist's disease (*Blastomyces dermatitidis*), by P. Fasal (pp. 260–272); South American blastomycosis (*Paracoccidioides brasiliensis*), by F. N. Guimaraes (pp. 273–284); Jorge Lôbo's blastomycosis (*Glenosporella loboi* and *G. amazonica*), by O. G. Costa (pp. 285–288); chromomycosis or dermatitis verrucosa (*Phialophora* spp.), by F. Piers (pp. 289–302); coccidioidomycosis (*Coccidioides immitis*), by R. A. Stewart (pp. 303–315); histoplasmosis (*Histoplasma capsulatum*), by A. C. Curtis and E. P. Cawley (pp. 316–326); sporotrichosis (*Sporotrichum schencki*), by A. González Ochoa (pp. 327–345); actinomycosis (nocardiosis), caused principally by *A. israeli*, *N. asteroides*, and *N. madurae* (pp. 346–359); Madura foot (*Madurella*, *Indiella*, and *Glenospora* spp., *Allescheria boydii*, and other species), by C. Castanedo y Pardo (pp. 360–367); rhinosporidiosis (*Rhinosporidium seeberi*), by M. Thiago de Mello (pp. 368–383); aspergillosis (*Aspergillus fumigatus* and occasionally *A. niger*, *A. glaucus*, and *A. nidulans*), by A. G. Franks and A. Guiducci (pp. 384–388); mucormycosis (*Mucor* spp., e.g., *M. corymbifer* [*Absidia corymbifera*], *M. pusillus*, *M. rhizopodiformis*, and *M. racemosus*), by A. G. Franks and A. Guiducci (pp. 389–392); penicilliosis (associated with various species of *Penicillium*, the pathogenicity of which, however, is regarded as doubtful), by A. G. Franks and A. Guiducci (pp. 393–395); doubtfully fungous conditions, namely, verticilliosis, ascribed to *Verticillium cinnabarinum*, and scopulariopsidosis (*Scopulariopsis* spp.), by L. H. Vrijman (pp. 396–403); mosaic fungus (artefacts consisting of a saponified lipoid material, possibly cholesterol or oleic acid, according to A. M. Davidson and P. H. Gregory in *J. Amer. med. Ass.*, 105, pp. 1262–1264, 1935), by A. González Ochoa (pp. 404–405); therapy of the mycoses, by G. M. Lewis and D. P. Torre (pp. 406–415); and cultural characteristics of the pathogenic fungi and of saprophytic fungi commonly seen in the laboratory,

describing and illustrating 28 species of the former and 26 of the latter group, by Lucille K. Georg and M. A. Gordon (pp. 416–434).

919. Bottger (C. W.). **Remarques sur la technique et la valeur de la coloration de Hotchkiss-MacManus en mycologie médicale.** [Notes on the technique and value of the Hotchkiss-MacManus stain in medical mycology.]—*Ann. Parasit. hum. comp.*, 29, 3, pp. 289–296, 1954.

A study of the Hotchkiss-MacManus stain [1, No. 1824] demonstrated that the preparation and staining of squamae, fragments of nails, and pieces of hair by this method and by the 'reverse technique' [2, No. 6] require a great deal of time. The preparation of Schiff's reagent (which is unstable) also involves a lengthy procedure. The examination of squamae and fragments of nails by means of caustic potash (or chloral lactophenol) in the case of pityriasis versicolor [*Malassezia furfur*] is more expeditious and gives more constant results. The Hotchkiss-MacManus stain is, however, recommended for use with rubbings and sections in suspected cases, e.g., of moniliasis (*Candida albicans*), torulosis (*Cryptococcus neoformans*), and histoplasmosis [*Histoplasma capsulatum*].

920. Seabury (J. H.), Peabody (J. W.), & Liberman (M. J.). **The usefulness of the Hotchkiss-McManus stain for the diagnosis of the deep mycoses.**—*Dis. Chest.*, 25, 1, pp. 54–69, 13 figs., 1954. [Spanish and French summaries.]

To illustrate the value of the periodic acid-Schiff stain [2, No. 574], either in actually demonstrating fungal involvement or assisting in its diagnosis, five cases are reported in this joint contribution from the Louisiana State University School and the Charity Hospital, New Orleans, namely, two of pulmonary moniliasis (*Candida* sp.) and one each of coccidioidomycosis (*Coccidioides immitis*), histoplasmosis (*Histoplasma capsulatum*), and blastomycosis (*Blastomyces dermatitidis*).

921. Carvajal (F.). **Fluvomycin: an antibiotic effective against pathogenic bacteria and fungi.**—*Antibiot. & Chemother.*, 3, 8, pp. 765–772, 1953. [Spanish abstract on p. 844.]

Among the fungi against which fluvomycin, an antibiotic produced by a strain (FC No. 5036) of *Bacillus subtilis* isolated from Ohio River mud, proved to be active in experiments at the Schenley Laboratories, Inc., Lawrenceburg, Indiana, were *Blastomyces* [*Paracoccidioides*] *immitis*, *B. dermatitidis*, *Candida albicans*, *C. stellatoidea*, *Coccidioides immitis*, *Epidermophyton floccosum*, *Microsporum audouini*, *M. canis*, *M. gypseum*, *Pityrosporum ovale*, *Trichophyton concentricum*, *T. mentagrophytes*, *T. rubrum*, *T. schoenleini*, *T. tonsurans*, *T. violaceum*, *Trichosporon asteroides*, *T. beigelii*, and *T. cutaneum*.

922. Burke (Ruth C.), Swartz (J. H.), Chapman (S. S.), & Huang (W.-Y.). **Mycoticin, a new antifungal antibiotic.**—*J. invest. Derm.*, 23, 3, pp. 163–168, 2 figs., 1954.

A new anti-fungal antibiotic, mycoticin, isolated at the Harvard Medical School, Boston, Massachusetts, from *Streptomyces ruber*, is particularly effective *in vitro* in inhibiting *Histoplasma capsulatum*, *Coccidioides immitis*, *Blastomyces dermatitidis*, and *Sporotrichum schencki*. The toxicity of mycoticin is fairly high and it is extremely labile, especially when exposed to ultra-violet light.

923. Cummings (Jean). **Antagonistic activity of Chaetomium globosum against fungi.**—*Mycologia*, 46, 3, pp. 289–292, 1 pl., 1954.

In studies conducted at the Western Reserve University, Ohio, on antagonism within the genus *Chaetomium*, monospore isolations were made from strain 6205 of *C. globosum* from the American Type Culture Collection. The progeny of one isolate was retained as a stock culture, grown on filter paper strips on maize-meal agar slants, and incubated at room temperature for two weeks. The test organisms were then streaked across the agar to the filter paper and incubated at room temperature for seven days. Under these conditions *C. globosum* completely inhibited the growth of half the organisms tested, including *Candida albicans*, *Trichophyton mentagrophytes*, *T. tonsurans*, *Microsporum gypseum*, *M. canis*, and *Sporotrichum schencki*. Partial inhibition occurred in *Cryptococcus neoformans*, *Candida krusei*, *M. audouini*, *Blastomyces dermatitidis*, *Histoplasma capsulatum*, and *Phialophora verrucosa*.

924. Bustinza (F.). **Actividad antibiótica del Penicillium funiculosum Thom (estirpe C 20-A).** [Antibiotic activity of *Penicillium funiculosum* Thom (strain C 20-A).]—*An. Inst. bot. A. J. Cavanilles* (formerly *An. Jard. bot. Madr.*), 12 (1, *1953*), pp. 197–217, 15 figs., 1954. [English summary.]

A strain of *Penicillium funiculosum* isolated during 1949 from a soil of volcanic origin near the borders of Caldera and Vandama, Grand Canary, designated C 20-A in the author's collection and A-3247 at the Northern Regional Research Laboratory, Peoria, Illinois, showed a wider antibiotic spectrum in *in vitro* experiments than N.R.R.L. strains 1032a, 1033, 1768, 2126, 2127, and 2075.

Most of the 29 bacteria and 13 fungi against which C 20-A showed antibiotic activity are of medical interest.

925. Smith (R. M.), Peterson (W. H.), & McCoy (Elizabeth). **Oligomycin, a new antifungal antibiotic.**—*Antibiot. & Chemother.*, 4, 9, pp. 962–970, 1 graph, 1954.

A report is presented from the Departments of Bacteriology and Biochemistry, University of Wisconsin, on the preparation, physical and chemical properties, and biological activity of oligomycin, which is produced in submerged culture by a soil-inhabiting organism resembling *Streptomyces diastatochromogenes*. It is strongly inhibitory to a number of fungi, especially *Blastomyces dermatitidis*, the growth of which at 37° C. was arrested at a concentration of 0·04 μgm. per ml., while *Histoplasma capsulatum* failed to develop in the presence of 1·1 μgm. Oligomycin is toxic to mice at a level ranging from 1·25 to 2·5 mg. per kg. body weight for either intravenous or intraperitoneal administration.

926. González Ochoa (A.). **Micosis oculares.** [Ocular mycoses.]—*Prensa méd. mex.*, 18, 2, pp. 30–36, 1953. [English summary.]

Since localized ocular mycoses appear to be rare in Mexico, the author reviews the clinical characters and treatment of those principally encountered, namely, sporotrichosis (*Sporotrichum schencki*) [1, Nos. 1042, 1047], actinomycosis (*Actinomyces bovis*) [*A. israeli*], moniliasis (chiefly *Candida albicans*), and rhinosporidiosis (*Rhinosporidium seeberi*) [1, No. 1213], with a brief reference to some rarer forms.

927. Reeves (R. J.) & Pedersen (R.). **Fungous infection of bone.**—*Radiology*, 62, 1, pp. 55–60, 4 figs., 1954.

A review of fungal infections of the bone, based on a series of 40 cases seen at the Department of Radiology, Duke University, Durham, North Carolina, includes descriptions of lesions caused by *Blastomyces* [? *dermatitidis*], *Crypto-*

coccus neoformans, and *Actinomyces israeli*, for which case-histories are given; and of lesions seen in coccidioidomycosis [*Coccidioides immitis*] and sporotrichosis [*Sporotrichum* (?) *schencki*]. The disease usually resembles acute osteomyelitis with a mild febrile reaction and an absence of leucocytes.

928. Fois (A.). **La istoplasmosi, coccidioidomicosi, blastomicosi e moniliasi nella pratica pediatrica.** [Histoplasmosis, coccidioidomycosis, blastomycosis, and moniliasis in pediatric practice.]—*Riv. Clin. pediat.*, 52, 6, pp. 452–463, 1953. [French and English summaries.]

This is a survey, based on 57 contributions to the pertinent literature, of the available information on the etiology, pathogenesis, anatomo-pathological and clinical aspects, and therapy of histoplasmosis (*Histoplasma capsulatum*), coccidioidomycosis (*Coccidioides immitis*), blastomycosis (*Blastomyces dermatitidis*), and moniliasis (*Candida albicans*), with special reference to the localized infections caused by the two first-named.

929. Hughes (F. A.), Whitaker (H. W.), Lowry (C. C.), Polk (J. W.), Foley (F. E.), & Fox (J. R.). **Resection for pulmonary mycotic disease.** —*Dis. Chest*, 25, 3, pp. 334–349, 11 figs., 1954. [Spanish and French summaries.]

From the Kennedy Hospital, Memphis, Tennessee, one case of coccidioidomycosis (*Coccidioides immitis*) and two of blastomycosis (*Blastomyces dermatitidis*), in which resection resulted in clinical improvement and possible cure, are reported in detail. In two further cases of combined histoplasmosis (*Histoplasma capsulatum*) and tuberculosis, the latter persisted after the operation.

930. Seeliger (H.). **Die Lungenmykosen und ihre Immunbiologie.** [Pulmonary mycoses and their immune biology.]—*Med. Mschr., Stuttgart, 1954*, 10, pp. 692–698, 5 figs., 1 graph, 1954.

Personal experience at the Institute of Hygiene, Friedrich-Wilhelm-University, Bonn, Germany, and 28 contributions to the relevant literature form the basis of this useful summary of information on the etiological, clinical, diagnostic, and therapeutic aspects of systemic pulmonary mycoses associated, e.g., with *Candida albicans* and related *C.* spp., *Geotrichum* sp., *Cryptococcus neoformans*, *Coccidioides immitis*, *Histoplasma capsulatum*, *Blastomyces dermatitidis*, *B.* [*Paracoccidioides*] *brasiliensis*, *Aspergillus fumigatus*, *Actinomyces bovis* [*A. israeli*], and *Nocardia asteroides*.

931. Lucasse (C.), Chardome (J.), Magis (P.), & Vanbreuseghem (R). **Mycose cérébrale par Cladosporium trichoïdes chez un indigène du Congo Belge. Note mycologique sur Cladosporium trichoïdes Emmons 1952.** [Cerebral mycosis caused by *Cladosporium trichoides* in a native of the Belgian Congo. Mycological note on *Cladosporium trichoides* Emmons 1952.]—*Ann. Soc. belge Méd. trop.*, 34, 4, pp. 475–484, 1 pl., 2 figs., 1954. [Flemish summary.]

A ten-year-old African of the Belgian Congo showing symptoms of cerebral compression died 80 days after admission to Coquilhatville Hospital. The third ventricle of the brain contained black fungus bodies closely resembling *Cladosporium trichoides* [1, No. 2406] and considered to be a strain thereof. From an examination of the organism the fourth author considers that Emmons's description [loc. cit.] should be supplemented to include both *Hormodendrum*- and *Acrotheca*-type fruiting bodies.

932. Mankowski (Z. T.). **The influence of various sex hormones on experimental infections.**—*Antibiot. & Chemother.*, 4, 10, pp. 1100–1104, 1 graph, 1954.

In this joint contribution from the Lankenau Hospital Research Institute and the Institute for Cancer Research, Philadelphia, it is reported that three intramuscular injections weekly of 5 mg. testosterone conferred slight protection on Webster Swiss mice against experimental aspergillosis (*Aspergillus* sp.). Progesterone at the same rates exerted no specific influence on the course of infection by *Candida albicans*, while extradiol (0·2 mg.) shortened the survival period of animals inoculated with the same fungus, *Histoplasma capsulatum*, and *Cryptococcus neoformans*.

933. Oster (K. A.) & Golden (M. J.). **Fungistatic and fungicidal test methods. Fungistatic and fungicidal compounds.**—Antiseptics, Disinfectants, Fungicides, and Chemical and Physical Sterilization, pp. 132–141; pp. 548–565, 1954. [841 pp., 71 figs., 130 tables. Connecticut: Lea & Febiger. $15.00.]

In the first contribution the authors outline the problems of treating superficial mycoses and discuss the difficulties in testing compounds for use against dermatophytes. The methods used for testing the fungicidal and fungistatic properties of chemicals in the pure state and incorporated in finished preparations are described.

In the second paper, the authors discuss the confusion which exists in the therapy of human mycotic diseases at the present time and list the fungistatic and fungicidal compounds used in the treatment of systemic and superficial mycoses, with notes on their effectiveness and mechanism of action.

934. Popoff (L.), Ivanoff (T.), Angeloff (N.), & Panaiotoff (I.). **Fungicides synthétiques. I. L'action antimycotique des substances du type des phytohormones et des dérivés naphtaléniques β-substitués.** [Synthetic fungicides. I. The antimycotic action of substances of the phytohormone type and of β-substituted naphthalenic derivatives.]—*C.R. Acad. bulg. Sci.*, 6, 1, pp. 37–40, 1953 (issued 1954).

Of 16 synthetic fungicides tested *in vitro* against *Trichophyton gypseum* and *Monilia* [*Candida*] *albicans* at the Dermatological Clinic of the State Academy of Medicine, Sofia, Bulgaria, the most active were 8-hydroxyquinoline, which inhibited the growth of the former organism at 2 and of the latter at > 4 mg. per cent., β-naphthylthioglycolic acid (> 4 and > 4, respectively), and chloro-2-naphthoquinone 1, 4 (+4 and +4, respectively).

935. Taschdjian (Claire L.). **In vitro effects of stilbamidine and 2-hydroxystilbamidine on some pathogenic fungi.**—*J. invest. Derm.*, 22, 6, pp. 521–526, 1954.

In *in vitro* experiments at New York University Hospital the minimum fungistatic concentration of stilbamidine and 2-hydroxystilbamidine ranged from 60 to 1,000 microgm. per ml. Sabouraud's agar, *Trichophyton schoenleini* being the most and *T. rubrum* the least sensitive of nine common dermatophytes. Of the three systemic fungi tested, *Sporotrichum schencki* was more sensitive than *Cryptococcus neoformans* and *Nocardia asteroides*. The addition of 1 per cent. arginine to the medium did not impair the anti-fungal properties of the diamidines. Neither compound appears to be capable of penetrating nails and hairs.

936. Dietrichson (E.). **Étude d'une collection norvégienne de levures. (2e Partie.)** [Study of a Norwegian collection of yeasts. (Second part.)]—*Ann. Parasit. hum. comp.*, 29, 3, pp. 271–288; 4, pp. 460–498, 1954.

This is a list with notes of 86 strains of yeasts comprising 35 species (includ-

ing species of *Saccharomyces* (9 spp.), *Hansenula* (3), *Debaryomyces* (1), *Torulopsis* (5), *Candida* (13), and *Trichosporon* (2)) and of 23 strains of two species of moulds (*Sporotrichum* and *Geotrichum*) isolated in Norway from human infections of unknown origin, asthma, bronchitis, fibrosis and infiltration of the lungs, suspected and actual pulmonary tuberculosis, pulmonary mycosis, exanthema, onychomycosis, dysuria, and septicaemia. Descriptions of the nine new species and seven new varieties are given together with their cultural characters.

937. Turner (O. A.). **Brain abscess caused by Nocardia asteroides.**—*J. Neurosurg.*, 11, 3, pp. 312–318, 3 figs., 1954.

Two cases of cerebral abscess caused by *Nocardia asteroides* are reported from the Youngstown Hospital Association, Ohio. A 15-year-old boy, despite removal of the apparently primary abscess, followed by antibiotic and sulphonamide therapy, succumbed to a spread of infection and meningitis. In a 31-year-old man, who died before therapy could be instituted, the poorly encapsulated abscess proved to be of pulmonary origin. Both the lung disease and the cerebral extension were quite insidious. The fungus was cultured from both patients.

938. Brannin (D. E.). **Cervico-facial actinomycosis.**—*J. Okla. med. Ass.*, 47, 5, pp. 121–123, 3 figs., 1954.

From Tulsa, Oklahoma, the author reports an apparently complete cure of cervico-facial actinomycosis (*Actinomyces bovis*) [*A. israeli*] in a 43-year-old male postal clerk by excision of the swelling just below the right jaw and the intramuscular administration of penicillin at the rate of 100,000 units every four hours on the day before operation and 300,000 every 12 hours thereafter until discharge 30 days after admission.

939. Cap (J.). **Zur Behandlung der Aktinomykose mit Penicillin und Sulfapyrimidin.** [On the therapy of actinomycosis with penicillin and sulphapyrimidine.] —*Derm. Wschr.*, 129, 13, pp. 321–325, 4 figs., 1954.

From the University Skin Clinic, Heidelberg, Germany, the author reports successful results in the treatment of four cases of cervico-facial actinomycosis [*Actinomyces israeli*], all in male agricultural workers, by the combined administration of 18 mega units of penicillin and 130 gm. sulphapyrimidine for an average period of four to six weeks.

940. Onisi (M.) & Nuckolls (J.). **Actinomycetes and other pleomorphic organisms recovered from pigmented carious lesions of human teeth.**—*Oral Surg.*, 7, 6, pp. 629–640, 8 figs., 1954.

After reviewing methods used in attempts to isolate the internal flora of teeth the author, working at the College of Dentistry, University of California, describes his method of surface sterilization of the teeth by immersing them in paraffin at 200° C. for varying periods, then splitting them through the pigmented decayed area whose flora is to be examined. From preclinical and clinical lesions, 90 and 84 per cent. of the isolates were pleomorphic types, one group of which could be classified on their morphologic characteristics as actinomycetes.

941. Ross (J. A.) & Knight (I. C. S.). **Actinomycosis of the subphrenic space.**—*Edinb. med. J.*, 61, 5, pp. 170–174, 1 graph, 1954.

Full clinical details are given of a case of subphrenic abscess due to streptothrix actinomycosis (*Actinomyces* [? *israeli*]) following appendicitis in

a 26-year-old male. The disease progressed to the extent of perforation of the diaphragm into the right lung. Drainage of the subphrenic space, bronchial aspiration, and oral administration of aureomycin [1, Nos. 2075, 2076] to a total of 138 gm. in 43 days led to recovery.

942. González Ochoa (A.). **El micetoma toracopulmonar por Actinomyces bovis y Nocardia brasiliensis. Consideraciones etiopatogénicas, clínicas y terapéuticas.** [Thoraco-pulmonary mycetoma caused by *Actinomyces bovis* and *Nocardia brasiliensis*. Etiopathogenic, clinical, and therapeutical considerations.]—*Gac. méd. Méx.*, 83, 2, pp. 109–115, 4 figs., 1953. [English summary.]

Discussing the clinical picture presented by the thoraco-pulmonary mycetomata caused by *Actinomyces bovis* [*A. israeli*] and *Nocardia brasiliensis* in Mexico, the author suggests that both diseases should be considered as one syndrome since no differences have been observed between them in respect of symptomatology, radiology, histopathology, and the morphology of the actinomycotic granules. A differential diagnosis is necessary, however, for therapeutic purposes, and it may be based on two criteria. The first is the different habitats of the two species, the endogenous *A. israeli* proceeding from the lung to the thoracic wall, while in the case of the exogenous *N. brasiliensis* the movement is reversed. Penicillin is the antibiotic of choice for *A. israeli*, whereas diamino-diphenyl-sulphone is preferable for the treatment of *N. brasiliensis*.

943. Coenegrachts (J.) & Keil (C.). **Actinomycose pulmonaire.** [Pulmonary actinomycosis.]—*Rev. méd. Liège*, 9, 2, pp. 37–39, 2 figs., 1954.

This is a case report from the medical clinic of the University of Liège, Belgium, of pulmonary actinomycosis (*Actinomyces israeli*) in a 66-year-old rural guard who derived great benefit from a course of therapy with potassium iodide and penicillin.

944. Heller (A.). **Über die Behandlung einer primären Lungenaktinomykose mit Aureomycin.** [On the treatment of a primary pulmonary actinomycosis with aureomycin.]—*Med. Klin.*, 49, 37, pp. 1475–1477, 4 figs., 1954.

A complete cure was effected in a grave case of primary pulmonary actinomycosis [*Actinomyces israeli*] in a 49-year-old male patient at the Municipal Hospital, Munich, Germany, by the administration of aureomycin (a total of 72 gm. peroral and 5 gm. intrapleural).

945. Brachmann (F.). **Aureomycintherapie bei Aktinomykose.** [Aureomycin therapy in actinomycosis.]—*Zahnärztl. Rdsch.*, 62, 11, pp. 290–291, 1953.

Five cases are reported from the Clinic for Dental Diseases, University of Munich, Germany, to illustrate the efficiency of aureomycin therapy in the treatment of oral actinomycosis (*Actinomyces* [*israeli*]).

946. Hengel (R.) & Linke (A.). **Beitrag zur Differentialdiagnose und Therapie der Abdominal-Aktinomykose.** [Contribution to the differential diagnosis and therapy of abdominal actinomycosis.]—*Dtsch. med. Wschr.*, 79, 37, pp. 1372–1375, 2 graphs, 1954.

From the Medical Clinic of the University, Heidelberg, Germany, the authors describe two cases of severe abdominal actinomycosis (*Actinomyces* Wolff-Israel [*A. israeli*]) in 24-year-old women, both of which were cured by long-term therapy with supronal. The differential diagnosis of actinomycosis may present great difficulties in the absence of fistulas: the possibility of its existence should be considered in obscure cases of feverish abdominal disease.

947. Seeliger (H.) & Lange (J.). **Nocardiose im Endstadium eines Morbus Hodgkin.** [Nocardiosis in the final stage of a case of Hodgkin's disease.]—*Z. Tropenmed. Parasitol.*, 5, 3, pp. 356–362, 4 figs., 1954. [English summary.]

From the Medical Clinic of the Friedrich-Wilhelms-University, Bonn, Germany, the authors present a full report of a case of lymphogranulomatosis (Hodgkin's disease) in a 33-year-old woman. *Nocardia asteroides* was isolated in pure culture, e.g., on Sabouraud's, Grütz's, and blood agar, from the multiple abscesses developing in the final stages of the illness. Normally widespread as a saprophyte, the infectivity of the organism was presumably enhanced by the lowered general resistance of the patient.

948. Szendi (B.). **Konservative Behandlung von genitaler Aktinomykose mit Penicillin.** [Conservative treatment of genital actinomycosis with penicillin.] —*Gynaecologia*, 137, 3, pp. 161–170, 4 figs., 1954. [English and French summaries.]

Two cases of actinomycosis (*Actinomyces* [*israeli*]) of the inner genital organs in women aged 41 and 28, both agricultural workers, are reported from Gyula, Hungary, to illustrate the value of conservative therapy with penicillin, and ten contributions to the pertinent literature are cited in a discussion of the disease, with special reference to diagnostic complications.

949. Mariat (F.). **Physiologie des actinomycètes aérobies pathogènes. II. La pyrimidine, facteur de croissance pour Nocardia lutea et Nocardia rubra.** [Physiology of pathogenic aerobic actinomycetes. II. Pyrimidine, growth factor for *Nocardia lutea* and *Nocardia rubra*.]—*Ann. Inst. Pasteur*, 87, 2, pp. 233–236, 2 graphs, 1954.

Pyrimidine was found to be the only growth factor required by *Nocardia lutea* and *N. rubra*, the optimum concentration being close to 14 μgm. per l. The incubation period of the former species is 91 hours and its maximum growth is attained in about 130, the corresponding times for the latter being 50 and 90, respectively.

950. Mazurek (C.). **Nouvelles recherches sur l'actinomycose expérimentale.** [New researches on experimental actinomycosis.]—*Ann. Inst. Pasteur*, 87, 3, pp. 345–347, 1954.

In recent experiments at the Institut Pasteur, Paris, young hamsters [*Cricetus frumentarius*: 2, No. 24] proved to be no more susceptible than guinea-pigs to infection by *Actinobacterium* [*Actinomyces*] *israeli*. The admixture of an adrenal solution (1 in 10,000) with a bouillon culture of a highly virulent strain of the pathogen resulted in the development of specific lesions in 33 per cent. of the guinea-pigs tested, but the hormone exerted no comparable effect in the case of weakly pathogenic isolates.

951. Thordal-Christensen (A.) & Clifford (D. H.). **Actinomycosis (nocardiosis) in a Dog: with a brief review of this disease.**—*Amer. J. vet. Res.*, 14, 51, pp. 298–306, 5 figs., 1953.

Following a review of the various forms of canine actinomycosis [2, Nos. 21, 22], the clinical and pathological findings in a case of canine distemper (hard pad disease) in a seven-month-old German sheepdog, complicated by actinomycotic lesions in the lungs, kidneys, and other abdominal organs, are reported from the Angell Memorial Hospital, Boston, Massachusetts. The strain isolated by the authors differs from all those described, bacteriological studies indicating that it belongs to the genus *Nocardia* as now classified in Bergey's Manual of Derminative Bacteriology, Sixth Edition, 1948.

952. Cross (R. F.), Nagao (W. T.), & Morrison (R. H.). **Canine nocardiosis—a report of two cases.**—*J. Amer. Vet. med. Ass.*, 123, 921, pp. 535–536, 1953.

Two cases of canine nocardiosis (*Nocardia asteroides*) discovered at necropsy in dogs that had died of distemper, are described from the Board of Commissioners of Agriculture, Honolulu, Hawaii. In both cases the organism had produced granulomatous lesions in the lung, and the presence of the organism was confirmed both microscopically and by culture from the infected tissue.

953. Cilli (V.), Battelli (C.), & Ceccarelli (A.). **Ricerche sperimentali su di uno stipite di Asteroides (Proactinomyces, Nocardia) asteroides repertato in un caso di actinomicosi spontanea del Cane.** [Experimental studies on a strain of *Asteroides* (*Proactinomyces*, *Nocardia*) *asteroides* found in a case of spontaneous actinomycosis of the Dog.]—*Boll. Ist. sieroterap. Milano*, 23, 3–4, pp. 139–173, 41 figs. (3 col.), 1954. [French and English summaries.]

Following a review of the relevant literature the authors present an exhaustive account of their experimental studies on a case of actinomycosis (*Nocardia asteroides*) in a five-month-old German sheepdog at Asmara, Eritrea, in 1946.

954. Agzamov (R.) & Shaptseva (Mme P. I.). Случай сочтения аспергиллеза с туберкулозом легких. [A case of association of aspergillosis with pulmonary tuberculosis.]—*Probl. Tuberc., Moscow*, 1, pp. 61–63, 2 figs., 1954.

The histological examination of the tissue surrounding an abscess on the lung of a 52-year-old male patient suffering from pulmonary tuberculosis at the Uzbek Scientific Research Institute of Tuberculosis, U.S.S.R., revealed the presence of a destructive species of *Aspergillus*. Cases of tuberculosis of the lung associated with species of *Aspergillus* are rare and the need for further study of the disease is emphasized.

955. Pesle (G. D.) & Monod (O.). **Bronchiectasis due to aspergilloma.**—*Dis. Chest*, 25, 2, pp. 172–183, 10 figs., 1954. [Spanish and French summaries.]

Essential information on the new and rare disease bronchiectasing aspergilloma (*Aspergillus* spp., including *A. fumigatus*) has already been presented from another source [2, No. 243].

956. Reiss (H. J.). **Über Schimmelmykosen : (als Beitrag zur Kenntnis der Pilzerkrankungen).** [On mould mycoses: (as a contribution to the knowledge of fungous diseases).]—*Zbl. allg. Path.*, 91, 1–3, pp. 113–130, 8 figs., 1953.

Following some general observations on the significance of mycoses, the variety of forms they assume, the diagnostic difficulties they present both to the clinician and the pathologist, and the possibility of the increase in certain types as a result of antibiotic therapy, the author reports some personal observations on aspergillosis (*Aspergillus* spp.) at the Pathological Institute of the Martin Luther University, Halle-Wittenberg, Germany. In two cases, a 28-year-old female and a 38-year-old male who succumbed, respectively, to abdominal typhus and panmyelopathy, the fungal involvement of the lungs was a subsidiary development, but the third, in a 59-year-old female, is designated as 'pseudotuberculosis aspergillina' and is believed to be one of the few records in the literature of generalized aspergillosis.

957. Hajós (K.), Petö (M.), & Pogány (I.). **Hypersensitivity to moulds and fungi in allergic (asthmatic) patients.**—*Acta med. hung.*, 4, 2, pp. 143–155, 1953.

Allergen tests on 521 patients at the Szövetség-utca Hospital, Budapest, revealed that those suffering from allergic disorders were hypersensitive to

certain fungi, notably strains of *Epidermophyton*, *Trichophyton*, and *Achorion*, and frequently gave a positive intracutaneous reaction. When strong sensitivity to fungi was manifest and when dermatomycoses and bronchial asthma occurred simultaneously a symptom-free period was obtained by systematic desensitization with specific allergens over a period of six to eight weeks. Some patients remained symptom-free for 13 to 14 months.

958. Keeney (E. L.). **Pulmonary mycotic infections. Allergic and immunologic factors.**—*Calif. Med.*, 81, 6, pp. 367–378, 1954.

The diagnosis and therapy of three groups of important pulmonary mycoses are discussed in relation to allergic and immunological factors. The first group (endogenous) comprises actinomycosis (*Actinomyces israeli*), moniliasis (*Candida albicans*), and geotrichosis (*Geotrichum* sp.); the second (endo-exogenous) cryptococcosis (*Cryptococcus neoformans*), aspergillosis (*Aspergillus fumigatus* and other *A.* spp.), and mucormycosis (*Mucor corymbifer* [*Absidia corymbifera*] and other *M.* spp.); and the third (exogenous) nocardiosis (*Nocardia asteroides*), coccidioidomycosis (*Coccidioides immitis*), histoplasmosis (*Histoplasma capsulatum*), and North American blastomycosis (*Blastomyces dermatitidis*).

959. Halde (Carlyn). **A note on the fungus flora of the Hawaiian atmosphere.**—*Hawaii. med. J.*, 12, pp. 370–371, 1953.

A two-months' study was carried out in 1950 of the fungi present in the Hawaiian atmosphere. Of the species observed, *Penicillium* (occurring in showers at Schofield Barracks) and *Hormodendrum* were most frequently encountered. *Nigrospora* and the actinomycetes were more common than previously reported. *Alternaria* was rarer than in the United States and the figures for the other fungi approximated to those recorded elsewhere.

960. Richards (M.). **Atmospheric mold spores in and out of doors.**—*J. Allergy*, 25, 5, pp. 429–439, 3 graphs, 1954.

During an entire year the total numbers of moulds trapped in Petri dishes containing Sabouraud's maltose agar in (*a*) a bedroom in a 60-year-old stone house in good repair and (*b*) the grounds of Cardiff Hospital [cf. 2, Nos. 473, 474 *et seq.*] were 1,289 and 6,859, respectively, species of *Cladosporium* predominating at both sites, especially from June to October, followed by sterile mycelia and *Penicillium*. The most important of the other genera represented were *Pullularia*, *Aspergillus*, *Phoma*, *Botrytis*, *Epicoccum*, and *Oospora*.

961. Black (T. C.) & Wilson (H. M.). **Coexistent pulmonary tuberculosis and systemic blastomycosis. Report of a case successfully treated with streptomycin, para-aminosalicylic acid, and stilbamidine.**—*Amer. Rev. Tuberc.*, 68, 4, pp. 615–621, 7 figs., 1953. [Spanish and French summaries.]

A case of coexistent pulmonary tuberculosis and systemic North American blastomycosis (*Blastomyces dermatitidis*) [2, Nos. 262, 265] is reported from the Tuberculosis and Medical Services, Veterans Administration Hospital, Alexandria, Louisiana. Treatment with streptomycin, para-aminosalicylic acid, and stilbamidine was successful. The patient remains well 16 months after treatment.

962. Branciforti (S.) & Franz (A.). **Associazione di blastomicosi ossea con tubercolosi osteoarticolare.** [Association of osseous blastomycosis with osteoarticular tuberculosis.]—*Minerva ortop.*, 3, 3, pp. 194–197, 6 figs., 1952.

Full details are given of the history and clinical course of a case of osseous

blastomycosis [*Blastomyces dermatitidis*] associated with osteo-articular tuberculosis in a male patient aged 28, admitted to the Instituto Ortopedico Rizzoli, Bologna, on 12th October, 1936, and transferred to the Instituto Elioterapico Codivilla-Putti, Cortina d'Ampezzo, on 16th November, 1937. Treatment by electrotherapy, iodine, and other applications to the cutaneous lesions was successful.

963. Burr (A. H.) & Huffines (T. R.). **Blastomycosis of the prostate with miliary dissemination treated by stilbamidine.**—*J. Urol.*, 71, 4, pp. 464–468, 2 figs., 1954.

Particulars are reported from the Veterans Administration Hospital, Oteen, North Carolina, of a case of severe miliary blastomycosis (*Blastomyces dermatitidis*) of the prostate, with demonstrable involvement of the epididymides, lungs, skin, and probably of the right eye and central nervous system, in a 55-year-old carpenter. There was a highly encouraging response to the intravenous administration of stilbamidine [2, Nos. 703, 704].

964. Friedman (Lorraine) & Conant (N. F.). **Immunologic studies on the etiologic agents of North and South American blastomycosis. I. Comparison of hypersensitivity reactions. II. Comparison of serologic reactions.**—*Mycopathologia*, 6, 4, pp. 310–324, 1953.

Studies at the Duke University School of Medicine, Durham, North Carolina, on the antigenic relationship of *Blastomyces* [*Paracoccidioides*] *brasiliensis* and *B. dermatitidis* indicated that both possess a similar antigenic substance (or substances) inducing hypersensitivity in inoculated animals and infected individuals, this in turn being responsible for cross-sensitivity reactions. Guinea-pigs inoculated with *P. brasiliensis* and ascertained to be sensitive to a filtrate antigen of that organism reacted when tested intradermally with the filtrate antigen of the *B. dermatitidis* and vice versa.

An antigenic relationship between the two organisms was also demonstrated by cross-reactions in properly prepared animals to intradermal inoculations of the yeast-phase antigens. The incidence of cross-reactions, however, was not so high with the yeast-phase antigens as when the filtrate antigens were used.

The evidence presented in support of an immunological relationship between the two organisms by animal experimentation was supported by the results obtained with human cases of North American blastomycosis. Of the few patients available, two of six allergic to *B. dermatitidis* yeast-phase antigen reacted to the same concentration of the *P. brasiliensis* yeast-phase antigen. By increasing the concentration of the heterologous antigen the incidence of cross-reaction was increased to include the remaining four patients. The results indicate that the degree of cross-reaction to these materials is slight or that the antigens used were not comparable.

The application of the complement-fixation test to the sera of rabbits with homologous and heterologous antigens of both fungi demonstrated cross-reactivity. Two of nine sera from patients with North American blastomycosis giving positive reactions with the homologous antigens cross-reacted at a low titre with the heterologous. Five of 11 sera positive with *P. brasiliensis* antigens reacted with one or more types of *B. dermatitidis* antigens. Immunization of rabbits was best effected by the use of massive doses of sonic-vibrated yeast-phase cell suspensions, the cells of *P. brasiliensis* being more fragile than those of *B. dermatitidis*.

965. Gale (G. R.). **The effect of β-propiolactone on the metabolism of Blastomyces dermatitidis.**—*J. Bact.*, 65, 5, pp. 505–508, 1953.

Previous work at Duke University School of Medicine, Durham, North Carolina, having shown that β-propiolactone inhibits the growth of *Blastomyces dermatitidis*, the investigation of its effects on the metabolism of the fungus was undertaken. The compound inhibited the oxidation of glucose, pyruvate, and certain amino acids, but the pyruvate oxidation was apparently non-competitive. The previous addition of pyruvate to the medium partially protected the pyruvate oxidase system from the drug, though above a certain point the period of pre-incubation with pyruvate was not a determining factor in the degree of inhibition obtained. The utilization of ammonia during the oxidation of glucose and pyruvate and during auto-respiration was inhibited by β-propiolactone, as was the transfer of amino acids across the cell surface. It is concluded that the cell surface or membrane is the principal site of action of the compound.

966. Gale (G. R.). **The effect of pyribenzamine on the metabolism of Blastomyces dermatitidis.**—*Antibiot. & Chemother.*, 4, 1, pp. 33–34, 1 graph, 1954.

From the Duke University School of Medicine, Durham, North Carolina, the author reports the inhibition of certain oxidative reactions of *Blastomyces dermatitidis* on Kelley's agar slants without blood at 37° C. by pyribenzamine [1, Nos. 1569, 2204]. At the lower concentration of 0·5 mg. per ml. the endogenous respiration of the fungus was stimulated to some extent, but at 1 mg. it was markedly inhibited.

967. Kunkel (W. M.), Weed (L. A.), McDonald (J. R.), & Clagett (O. T.). **North American blastomycosis—Gilchrist's disease; a clinicopathologic study of ninety cases.**—*Int. Abstr. Surg.*, 99, 1, pp. 1–26, 1954.

In 54 of the 90 cases of blastomycosis (*Blastomyces dermatitidis*) diagnosed at the Mayo Clinic, Rochester, Minnesota, up to 1st January, 1951, the disease was apparently confined to the skin; in the remainder it was systemic. The mortality rate in the latter series was 23·3 per cent. A primary pulmonary focus is stated to be present in practically all cases of both cutaneous and systemic blastomycosis.

In an addendum to this paper the case is reported of a 51-year-old truck-driver who had proved pulmonary blastomycosis for 18 years and whose history suggested that the disease had been present for at least 31. Left upper lobectomy with resection of the superior segment of the left lower lobe was performed in 1951, and at the time of writing the clinical condition was improving under stilbamidine therapy, though the fungus was still present in cultures of the gastric contents after the last course.

968. Marx (F. J.) & Berenbaum (A. A.). **Systemic blastomycosis. Cause of an obscure infection in a nonendemic area.**—*New Engl. J. Med.*, 251, 2, pp. 56–60, 7 figs., 1954.

A typical case of systemic blastomycosis (*Blastomyces dermatitidis*) in an 18-year-old youth is described from the St. Luke's and Children's Medical Center, Philadelphia. Blastomycosis is not endemic in the area, but the patient was born and had lived in North Carolina until three months before the symptoms appeared. At autopsy the organism was demonstrated in the heart, lungs, spleen, and left knee joint, but cultures were not obtained.

969. Robbins (E. S.). **North American blastomycosis in the Dog.**—*J. Amer. vet. med. Ass.*, 125, 932, pp. 391–398, 10 figs., 1954.

Three new case reports of canine blastomycosis (*Blastomyces dermatitidis*)

[2, No. 53] from Cincinnati, Ohio, two with complete necropsy findings, are added to the relevant literature, 38 contributions to which are here enumerated. The course and characteristics of the disease in man and dog are compared. It is concluded that the lungs are the primary site of infection except in the few cases (three in man and none in the dog) where another channel of entry is definitely known.

In one of the author's cases the severe involvement of the heart, liver, and ovary was unusual, while in another the demonstration of organisms in the blood-vessels illustrates the mode of dissemination.

970. Soemiatno. **Meningitis disebabkan oleh Debaryomyces neoformans dan sumbangan pengetahuan tentang 'Blastomycetes' = Djamur jang pathogen bagi manusia.** [Meningitis caused by *Debaryomyces neoformans* and a contribution to our knowledge of the Blastomycetes = fungi pathogenic to man.]—*Madjalah Kedokteran Indonesia*, 3, 4, pp. 137–149, 8 figs., 1953. [Indonesian, with English summary.].

Clinical details are given of a very exceptional case of meningitis, caused by *Debaryomyces* [*Cryptococcus*] *neoformans*. Inoculations of laboratory animals with pure cultures of the organism demonstrated that the pathological lesions caused by it were characterized by a striking lack of infiltration in the tissues. A dilution-resistance test indicated that the organism was sensitive to sulphadiazine but not to any of the other drugs tested. The author states that the term blastomycosis should not be applied to a disease caused by a budding organism, since the causal organisms of most forms of blastomycosis can produce mycelium in suitable media.

971. Alajouanine (T.), Houdart (R.), & Drouhet (E.). **Les formes chirurgicales spinales de la torulose ; torulome de la queue de cheval.** [Surgical spinal forms of torulosis; 'horse's tail' toruloma.]—*Rev. neurol.*, 88, 3, pp. 153–163, 6 figs., 1953.

A full account is given of a very unusual case of spinal torulosis caused by *Cryptococcus neoformans* in a 53-year-old woman in France. The fungus was cultured on Sabouraud's agar and shown to be pathogenic to mice inoculated both through the intravenous and intraperitoneal routes. The patient was treated by surgical intervention, followed by a course of actidione therapy, the initial results of which were promising; three weeks after its commencement, cultures from the suboccipital fluid were negative for the fungus.

972. Negroni (P.) & Briz de Negroni (C.). **Manifestaciones cutáneomucosas de la blastomicosis europea a propósito de una nueva observación.** [Cutaneomucous manifestations of European blastomycosis in connexion with a fresh observation.]—*Rev. Inst. bact., B. Aires*, 15, 2, pp. 140–144, 1 pl., 1950–1953. [English summary.]

A mycological study of a case of European blastomycosis in a 30-year-old native of Argentina revealed that *Debaryomyces* [*Cryptococcus*] *neoformans* [cf. 2, No. 275] is the causal organism, probably entering by means of the oral-nasal-pharyngeal membrane and the respiratory or intestinal tracts and giving rise to the following clinical forms: I. generalized, II. localized, and III. associated with histoplasmosis [*Histoplasma capsulatum*] or Hodgkin's disease. The cutaneous manifestations may be primary, i.e., of the Busse-Buschke or Curtis type, or secondary, appearing as ulcers, haemorrhagic, infiltrated zones, tumorous masses, and subcutaneous abscesses.

In the case under observation the primary symptoms of intestinal dysentery

were succeeded by respiratory ones of the influenza type, and finally by generalized infection with subcutaneous abscesses which became ulcerated, caries of the bone tissue, and involvement of the central nervous system. *C. neoformans* was obtained in culture from a closed abscess.

973. Duarte (E.). **Criptococcose generalizada. A presentação de um caso com autopsia completa.** [Generalized cryptococcosis: the presentation of a case with complete autopsy.]—*Hospital, Rio de J.*, 43, 3, pp. 345–361, 12 figs., 1953.

This is a comprehensive report from the Istituto Oswaldo Cruz on the sixth case of cryptococcosis (*Cryptococcus ncoformans*) to be recorded in Brazil, the patient being a 32-year-old male negro. The autopsy revealed involvement of various organs, including the lungs, brain, spinal medulla, and meninges.

974. Platt (W. R.) & Eynon (H. K.). **Clinicopathologic conference.**—*Amer. J. clin. Path.*, 23, 2, pp. 161–170, 2 figs., 1952.

Full clinical and pathological details are given of a case of meningitis caused by *Cryptococcus neoformans* in a 76-year-old white man admitted on 6th September, 1951, to the West Jersey Hospital, Camden, New Jersey, with a history of increasing weakness and fainting spells of approximately four weeks' duration. Death ensued on 21st September, 1951, the direct cause being terminal bronchopneumonia and associated extensive purulent tracheobronchitis. Microscopic examination revealed that most of the meninges and perivascular cerebral spaces were infected by *C. neoformans*.

975. Portella (A.). **La torulosi.** [Torulosis.]—*Ann. Sanità pubbl.*, Roma, **14**, 5, pp. 1353–1360, 1953.

An account, based on the relevant literature (92 references), is given of torulosis (*Cryptococcus neoformans*), including the symptomatology and therapeutic treatment.

976. Tomcsik (J.) & Guex-Holzer (S.). **Demonstration of the bacterial capsule by means of a pH-dependent salt-like combination with proteins.**—*J. gen. Microbiol.*, 10, 1, pp. 97–109, 2 pl., 1954.

The results of studies at the Institute for Hygiene and Bacteriology, University of Basle, Switzerland, showed that the capsules of *Cryptococcus neoformans* and a number of bacteria are invisible under the phase-contrast microscope but become discernible on the addition of several proteins usually at a very narrow pH range lying on the acid side of their iso-electric points.

977. Galindo (D. L.) & Bohls (S. W.). **Combined pulmonary and central nervous system cryptococcosis ; a case report.**—*Milit. Surg.*, 113, 5, pp. 403–413, 9 figs., 1953.

A case of cryptococcosis (*Cryptococcus neoformans*), involving both the pulmonary and central nervous systems in a 30-year-old Latin American, is presented from the Santa Rosa Hospital, San Antonio 7, Texas, on account of two unusual features, one of which was a large mass in the left lung and the other the multiple nodular tumefactions of the cerebrum, cerebellum, midbrain, and pontine regions accompanying the meningitis.

A comprehensive review of the relevant literature (75 contributions to which are listed in the bibliography) indicates that about 172 cases of all types of the disease have been recorded, in 32 of which there was combined infection of the lungs and nervous system.

978. Boyer (P.), Delville (J. P.), & Mairlot (F.). **Observation d'un cas de torulose méningée et pulmonaire.** [Observation of a case of meningeal and pulmonary torulosis.]—*Ann. Soc. belge Méd. trop.*, 34, 2, pp. 229–232, 1954. [Flemish summary.]

The present case of torulosis (*Cryptococcus neoformans*) in a 40-year-old male worker at the Piscicultural Station is the second to be reported from Élisabethville [2, No. 753] and the third from the Belgian Congo [2, No. 754]. The development of the pulmonary symptoms was insidious, a period of two years elapsing between their onset and the patient's entry into hospital. Acute meningeal infection occurred in the final stages of the illness.

979. Soysal (S. S.), Unat (E. K.), & Tahsinoglu (M.). **Un cas de cryptococcose.** [A case of cryptococcosis.]—*Arch. franç. Pédiat.*, 11, 3, pp. 246–260, 9 figs., 1954.

A full account is presented from the Pediatric Clinic, University of Istanbul, Turkey, of the clinical, mycological, and anatomo-pathological aspects of a case of generalized cryptococcosis (*Cryptococcus neoformans*) in a seven-year-old boy.

980. Linden (I. H.) & Steffen (C. G.). **Pulmonary cryptococcosis.**—*Amer. Rev. Tuberc.*, 69, 1, pp. 116–120, 2 figs., 1954.

A case of pulmonary cryptococcosis (*Cryptococcus neoformans*) in a 47-year-old male patient at the Veterans Administration Center, GMeS Hospital, Los Angeles, California, is of interest as beginning during observation for another complaint which was being treated with cortisone. The drug was suspected of inducing predisposition to infection by *C. neoformans*, which progressed for a month as indicated by chest X-rays and examination of the sputum, and then regressed spontaneously.

981. Grunberg (E.) & Schnitzer (R. J.). **A chemotherapeutic study of antimonials in the experimental infection of mice with Cryptococcus neoformans.** —*Yale J. Biol. Med.*, 26, 2, pp. 132–139, 1953.

In experiments on mice at the Chemotherapy Laboratories of Hoffmann-La Roche, Inc., Nutley, New Jersey, the stibonic acid RO 2—3094, a member of the group of substituted carbamylbenzene stibonic acids, showed a comparatively low toxicity, and induced a marked increase in the survival rate of animals artificially infected with *Cryptococcus neoformans* (77·2 per cent. survival against 20·4 per cent. in one experiment, a similar result being obtained in 16 replicates). There was an appreciable reduction in the extent of the lung lesions and in the number of successful retrocultures as a result of the treatment. Cultures from the brain gave similar results to those from the lungs. In tests of four dosages ranging from 5·2 to 1·05 gm. per kg. the survival rate varied from 60 to 80 per cent. whereas all the controls died. The reduction of culture growth was significantly greater in the 5·2 gm. dosage group than in the others.

982. Kliewe (H.) & Hofer (J.). **Über die Systematik eines pathogenen Sprosspilzes.** [On the systematic position of a pathogenic yeast fungus.]—*Frankfurt. Z. Path.*, 63, 1, pp. 88–94, 1952.

On the basis of intensive physiological and morphological studies the fungus responsible for the death of a nine-year-old girl at the Children's Hospital, University of Mainz, Germany, was identified as *Debaryomyces matruchoti*.

983. Drouhet (E.) & Zapater (R. C.). **Phase levure et phase filamenteuse de Paracoccidioides brasiliensis ; étude des noyaux.** [Yeast phase and filamentous phase of *Paracoccidioides brasiliensis*; study of the nuclei.]—*Ann. Inst. Pasteur*, 87, 4, pp. 396–403, 1 pl., 1 fig., 1954.

The nuclear cytology of the yeast and mycelial phases of *Paracoccidioides brasiliensis* was studied by Delamater's technique [1, No. 1106] and other staining methods. The former phase was investigated in cultures produced on various media at 37° C., as well as on tissue sections from inoculated hamsters [*Cricetus frumentarius*], and the latter on different substrata at 25°.

The yeast forms are multinucleate. The process of multiplication appears to follow a cycle of development traversing various stages. Thus, yeasts with several resting nuclei, uniformly distributed, give place to forms in which the nuclei are situated at the periphery and in process of division, after which multiple budding is observed. The buds are uninucleate at first, but as they expand the nuclei divide and eventually the buds separate into free cells which again begin to bud.

In contrast to the abundance of nuclei in the yeast phase, the hyphae contain very few, which are distinguishable only with difficulty.

984. Furtado (T. A.), Wilson (J. W.), & Plunkett (O. A.). **South American blastomycosis or paracoccidioidomycosis. The mycosis of Lutz, Splendore, and Almeida.**—*Arch. Derm. Syph., Chicago*, 70, 2, pp. 166–180, 7 figs., 1954.

This is a comprehensive review from the University of Southern California on the present state of knowledge on South American blastomycosis [*Paracoccidioides brasiliensis*]. The disease is commonest in adult males, entering usually by the oral mucosa, and disseminated by haematogenous or lymphatic spread. Owing to the pleomorphic nature of the clinical manifestations of the disease, the division into tegumentary and extrategumentary types is preferred. The tegumentary type, which includes mucosal lesions, is commonest around the mouth; it shows much variation in the types of lesions, but there are generally erythematous granular ulcerated areas. In the extrategumentary type, the lymph nodes are frequently involved, especially in the neck, and Hodgkin's disease may be simulated, but the lymph nodes ultimately suppurate and ulcerate through the skin. The lungs are more often involved than was previously supposed, with less clinical evidence than might be expected from the X-ray findings. The skin test is not altogether reliable, but the fungus may be obtained from lesions or lymph nodes in life or at autopsy.

Primary cultures grow best at 25° to 30° C. on blood agar, but Sabouraud's dextrose agar should be used if the material is contaminated by bacteria. Growth is very slow, producing white colonies, soft on blood agar, firm with aerial hyphae on Sabouraud's medium. At 37° yeast-like colonies develop. Subcultures grow more rapidly. Microscopy of cultures grown at room temperature shows branched septate mycelia with intercalary or terminal chlamydospores. Maize meal agar is the most satisfactory medium for morphological studies since it suppresses mycelial growth whilst allowing the development of aleuriospores.

The most effective procedure for animal experiments is the intratesticular inoculation of guinea-pigs resulting in the development of epididymoorchitis and revealing the characteristic tissue forms of the fungus.

The therapy of South American blastomycosis presents considerable difficulty. The use of sulphonamides prolongs life and alleviates the symptoms, but relapses are frequent and cures rare.

985. Sanchez (H. G.), Guimil (A.), & Ginesta (J. R.). **Paracoccidioides brasiliensis ; observación clínica.** [*Paracoccidioides brasiliensis*; a clinical observation.]—*Rev. med. Hosp. esp., B. Aires*, 22, 10–12, pp. 155–159, 1952.

Details are given of the clinical features of a case of *Paracoccidioides brasiliensis* in a 14-year-old girl from Chaco, Argentina [2, No. 54] characterized chiefly by suprahyoidal tumourization. On later re-admission abdominal tumourization was observed. Treatment with penicillin, streptomycin, and sulphonamides was unsuccessful, although the last-named gave temporary benefit.

986. Almeida (F. de) & Lacaz (C. da S.). **Blastomicose 'tipo Jorge Lôbo'.** [Jorge Lobo's blastomycosis.]—*An. Fac. med. Univ. S. Paulo*, 24, pp. 5–37, 9 pl., 1948–1949. [English summary.]

An account is given of the clinical and cultural features where possible of various cases of Jorge Lôbo's blastomycosis reported in the Brazilian literature and of a few others observed in the country. The authors consider that the causal organism is an 'independent' species of *Paracoccidioides* [but Almeida (Abs. 510 *Intern. microbiol. Congr.*, p. 128, 1950) subsequently considered this pathogen to be identical with *P. brasiliensis*].

987. Azulay (R. D.). **Experimental chromoblastomycosis in man.**—*J. invest. Derm.*, 19, 5, pp. 307–309, 2 figs., 1952.

At the Faculdade Fluminense de Medicina, Niteroi, Rio de Janeiro, inoculation of the leg of a human volunteer with a recently isolated strain of *Fonsecaea* [*Phialophora*] *pedrosoi* produced a lesion typical of chromoblastomycosis, which grew to 15 cm. in diameter three months after inoculation and after six months gave rise to two new lesions.

988. Hadida (E.), Marill (F. G.), & Streit (R.). **Dermatite verruqueuse mycosique (chromoblastomycose).** [Mycotic dermatitis verrucosa (chromoblastomycosis).] —*Bull. Soc. franç. Derm. Syph.*, 60, 3, pp. 281–282, 1953.

The clinical and histopathological aspects of a case of chromoblastomycosis (*Phialophora verrucosa*) of 12 years' duration, involving the left leg and foot of a 60-year-old native, are briefly reported from Algeria [1, Nos. 284, 285].

989. Levan (N.). **Chromoblastomycosis.**—*Calif. Med.*, 80, 6, pp. 468–470, 3 figs., 1954.

A case of chromoblastomycosis caused by *Hormodendrum compactum* [*Phialophora compacta*: 1, Nos. 14, 1054, 1061, 1234, 1651, 1880, 2218; 2, No. 286] in a 47-year-old Filipino agricultural labourer, who had suffered for 18 years from a slowly enlarging tumour on the left foot, is reported from Bakersfield, California. This is apparently the first time the disease has been recognized and apparently contracted in the State.

990. Bennett (H. D.), Milder (J. W.), & Baker (L. A.). **Coccidioidomycosis—possible fomite transmission.**—*J. Lab. clin. Med.*, 43, 4, pp. 633–636, 1954.

A case is reported from the Veterans Administration Hospital, Houston, Texas, in which *Coccidioides immitis* was isolated from a lumbar abscess in a coloured patient who had never been in an endemic area but had worked for a number of years with hemp imported from California and Mexico. Attempts to isolate the fungus from the factory dust, thought to be the source of infection, were unsuccessful.

991. Reiss (F.), Buncke (Constance M.), & Caroline (L.). **Coccidioidomycotic granuloma in New York City.**—*N.Y. St. J. Med.*, 54, 8, pp. 1206–1207, 4 figs., 1954.

A case of coccidioidal granuloma (*Coccidioides immitis*) involving the left knee of a 27-year-old male, born in Texas and resident there until 1950, is reported from Bellevue Hospital, New York. At the onset, early in 1951, the symptoms were suggestive of gonococcal arthritis, but subsequently the fungus was obtained in pure culture and inoculation into a guinea-pig gave positive results with typical spherule formation.

992. Puckett (T. F.). **Hyphae of Coccidioides immitis in tissues of the human host.**—*Amer. Rev. Tuberc.*, 70, 2, pp. 320–327, 6 figs., 1954.

In a study at the Fitzsimons Army Hospital, Denver, Colorado, of resected tissue from 64 cases of stabilized, pulmonary coccidioidomycosis (*Coccidioides immitis*) the authors found hyphae in 25 of the 34 cavitary lesions, and in nine out of 30 granulomatous lesions. On several occasions fragmented spherules were seen in close association with the hyphae, but usually either hyphae or spherules were present. It was unlikely that the hyphae belonged to a saprophytic fungus, as animal inoculation from purely mycelial lesions produced typical spherules in the new host, and furthermore the morphology of the mycelial growth was similar in all cases. The fragments of mycelium in the sputum are not considered very infectious, as few 'contact' cases of coccidioidomycosis have been reported.

993. McLetchie (N. G. B.), Reid (N.), & Simpson (D. M.). **Coccidioidomycosis.** —*Canad. med. Ass. J.*, 67, 6, pp. 655–658, 2 figs., 1952.

From the Camp Hill Hospital and Dalhousie University, Halifax, Nova Scotia, a fatal case of coccidioidomycosis (*Coccidioides immitis*) is reported in a 61-year-old man who had never visited an endemic area. This is probably the first record of the disease for Canada. Although the fungus was not actually isolated, its appearance in tissue sections pointed with certainty to *C. immitis* or a closely related organism. Though the respiratory system was presumably the primary portal of entry, the fungus was confined almost exclusively to the muscles, and granulomatous reaction led to gross wasting and contracture of the limbs.

994. Steinberg (I. R.), Ink (J.), Iaricci (V.), & Ygobone (A.). **Sobre un caso de enfermedad de Wernicke-Posadas. Coccidiomicosis. Su estudio clínico, bacteriológico y anátomopatológico.** [A case of Wernicke-Posada's disease. Coccidiomycosis. Its clinical, bacterial, and anatomopathological study.]— *Sem. méd., B. Aires*, 103, 19, pp. 669–670, 683–684, 5 figs., 1953.

A case of coccidioidomycosis (*Coccidium* [*Coccidioides*] *immitis*) in a 26-year-old railwayman is reported from the Clinic of Infectious Diseases, Buenos Aires, Argentina. Originating as a diffuse swelling on the big toe of the right foot, infection gradually spread through the lymphatic system, involving the skin and intestines, especially the lungs, liver, and spleen, and terminating fatally seven years after its onset.

995. Negroni (P.) & Daglio (C. A.). **Estudios sobre el Coccidioides immitis Rixford et Gilchrist. X. Tercera contribución al conocimiento de la endemia argentina.** [Studies on *Coccidioides immitis* Rixford & Gilchrist. X. Third contribution to the study of Argentine endemiology.]—*Rev. Inst. bact., B. Aires*, 15, 1, pp. 31–32, 1950–1953. [English summary.]

In a further contribution to this series [2, Nos. 69, 740], tests for reaction to coccidioidin were carried out on 432 patients undergoing treatment for tuberculosis at the Liga Argentina. Only 3·47 % (ten men and five women) reacted to

coccidioidin, the majority being between 21 and 50 years of age. Nine had resided in suspected zones of endemic coccidioidomycosis (*Coccidioides immitis*).

996. Negroni (P.). **Estudios sobre el Coccidioides immitis Rixford y Gilchrist. XI. Manifestaciones cutáneas de la enfermedad de Posadas.** [Studies on *Coccidioides immitis* Rixford & Gilchrist. XI. Cutaneous manifestations of Posada's disease.]—*Rev. Inst. bact., B. Aires*, 15, 2, pp. 126–128, 6 figs., 1950–1953. [English summary.]

Posada's disease (*Coccidioides immitis*) may be characterized by allergic or parasitized cutaneous lesions. The first may assume the characters of erythema nodosum (4 to 4·4 per cent. of global infections), erythema multiforme (2 to 2·6), urticaria (2), or occasionally erythema morbilliformis. In general they disappear within a week or a month leaving a consistent immunity.

The parasitized type generally appear in the course of disseminated coccidioidomycosis and may be dermoepidermic or subcutaneous. The former frequently develop successively as a macule, papule, and a fungal or cauliflower-like tumour which ulcerates. Subcutaneous lesions may assume the type of cold abscess, flaccid tumour, or gummatous lesions. The affected lymph-nodes of the neck, bones, and joints may ulcerate secondarily in the skin producing Jacobson's scrofulodermic or Madura foot type of lesions. In these disseminated forms allergy and acquired resistance weaken and prognosis is unfavourable (50 to 60 per cent. mortality).

997. Conant (N. F.) & Vogel (R. A.). **The parasitic growth phase of Coccidioides immitis in culture.**—*Mycologia*, 46, 2, pp. 157–160, 4 figs., 1954.

At the School of Medicine, Duke University [Durham, North Carolina], several strains of *Coccidioides immitis* exposed to saline 'tween 80' solutions exhibited pleomorphism, shown in moist mycelial growth on the agar surface, absence or reduction of arthrospore formation, and (in two strains) development of culture spherules (enlarged, rounded, chlamydospore-like structures, many of which contained endospores). Attempts to induce the consistent formation of these spherules by means of 'tween 80' failed; in some strains large, dark-staining bodies were present along the course of the mycelium.

998. Burke (Ruth C.). **Viability of Coccidioides immitis. 1. Isolation from a seven-month-old sealed microscope slide.**—*J. invest. Derm.*, 23, 1, pp. 1–2, 1954.

At the Harvard Medical School, Boston, Massachusetts, sporangia in a sealed slide containing untreated pus from a liver abscess obtained at autopsy from a case of coccidioidomycosis (*Coccidioides immitis*) germinated to form mycelium from which *C. immitis* was isolated after seven months. It is thought that germination of the sporangia may have been instigated by exposure of the slide to low temperatures during a motor journey (*Amer. Rev. Tuberc.*, 16, p. 95, 1950), and laboratory workers are consequently warned of the dangers of using inadequately sealed slides of untreated pus.

999. Vogel (R. A.), Fetter (B. F.), Conant (N. F.), & Lowe (E. P.). **Preliminary studies on artificial active immunization of Guinea Pigs against respiratory challenge with Coccidioides immitis.**—*Amer. Rev. Tuberc.*, 70, 3, pp. 498–503, 1954.

As a preliminary to the development of an immunization process applicable to subjects entering for the first time an area where coccidioidomycosis (*Coccidioides immitis*) is known to be endemic, workers at the Duke University School of Medicine, Durham, North Carolina, describe a method for immuniz-

ing guinea-pigs by repeated injections of a heat-killed culture of *C. immitis* grown in the yolk-sac of embryonated hens' eggs. Treated animals were exposed for one hour to an aerosol prepared from dried cultures of the fungus and were killed at intervals of from one to six weeks after exposure. Increased resistance of the sensitized animals compared with the non-sensitized was noted on microscopic and macroscopic examination.

1000. Levan (N. E.). **Occupational aspects of coccidioidomycosis.**—*Calif. Med.*, 80, 4, pp. 294–298, 1954.

The following factors are considered by United States insurance companies, the Industrial Accident Commission, and the courts in determining whether or not coccidioidomycosis (*Coccidioides immitis*) infections are of occupational origin, thereby entitling the subjects to compensation: laboratory infections [2, No. 289]; other infections due to exposure to contaminated articles, arising outside endemic areas; infections in employees entering endemic areas pursuant to their occupations; primary cutaneous inoculation; localization or aggravation, or both, of pre-existing coccidioidomycosis by occupational injury; infections in agricultural workers introduced into endemic areas; and infections in residents of endemic areas alleged to result from occupational exposures.

1001. Winn (W. A.). **Coccidioidomycosis.**—*Trans. Life Insce med. Dir. Amer.*, 36, pp. 121–132, 1952.

An account is given of coccidioidomycosis (*Coccidioides immitis*) [1, No.2122], its causal organism, geographical distribution, symptomatology, diagnosis, dissemination within the body, and treatment. Initial infection, 'primary coccidioidomycosis', prevails in rather sharply limited areas of the south-western United States characterized by hot, dry, dusty summers and a rainfall almost entirely limited to the winter. It is usually a benign, self-limited process that leads to recovery and the establishment of permanent immunity. In three-fourths of the cases the symptoms are so mild that the condition remains unrecognized and can be proved to be present only by a positive skin sensitivity to coccidioidin. Initial infection can, however, be a phase preceding dissemination resulting in widespread involvement of body systems and an ensuing 50 per cent. mortality. It may also leave behind chronic pulmonary changes. The known endemic area comprises the desert-like country extending from western Texas along the Mexican border, through southern New Mexico, central and southern Arizona, southern Utah, the tip of Nevada, and the highly endemic southern San Joaquin Valley. In members of the white race dissemination occurs only in 0·25 per cent. of the cases, but the dark-skinned races are definitely susceptible, dissemination in negroes being ten times as frequent as in whites. No specific treatment has yet been found effective against *C. immitis* in the body, but the author obtained slightly favourable results with promizole.

1002. Cowper (H. H.) & Emmett (J.). **Coccidioidomycosis in San Fernando Valley ; report of a study carried out in 1951–1952.**—*Calif. Med.*, 79, 2, pp. 97–98, 1953.

Four cases of benign pulmonary coccidioidomycosis (*Coccidioides immitis*) occurred during May 1951 among about 35 boy students at a boarding-school and farm covering 30 acres in the north-western section of the San Fernando Valley within the city of Los Angeles, California. Epidemiological and serological evidence was obtained that infection had been contracted on or near the farm.

1003. Lubarsky (R.) & Plunkett (O. A.). **Survival of C. immitis in passage through the digestive tract of mice.**—*Publ. Hlth Rep., Wash.*, 69, 5, pp. 494–497, 1 fig., 1954.

In this joint report from the Department of Botany, University of California, and the Los Angeles County General Hospital, it is stated that arthrospores of *Coccidioides immitis*, ingested by mice with contaminated drinking water, survive passage through the digestive tract and can usually be isolated from the faeces. The fungus was also recovered from the faeces of mice fed on spherule and endospore suspensions. Constant feeding with *C. immitis*, however, either as arthrospores or spherules, failed to induce infection. It is postulated that the organism may be also disseminated through the soil by droppings from predatory animals which have fed on infected rodents.

1004. Chinn (H. I.), Mitchell (R. B.), Bieberdorf (F. W.), & Arnold (Anna C.). **Effectiveness of various compounds against Coccidioides immitis.**—*Antibiot. & Chemother.*, 4, 9, pp. 982–987, 1954.

Of 37 compounds tested against three strains of *Coccidioides immitis* at the United States Air Force School of Aviation Medicine, Randolph Field, Texas, stilbamidine was the most effective, completely inhibiting growth at concentrations of 0·001 M or less. Wellcome preparations 48–166 and 48–239, Parke Davis CMA 37, Libby 01780, thorazine, pyrrolidino proprionyl phenothiazine, and pentachlorophenyl cellosolve produced comparable results at concentrations ranging from 0·001 to 0·01 M.

1005. Cohen (R.) & O'Connor (R.). **Para-amino-benzoic acid as a fungicide for Coccidioides immitis.**—*Arch. Pediat.*, 70, 12, pp. 404–405, 1953.

Para-aminobenzoic acid (ethyl vanillate), which completely inhibits the growth of *Coccidioides immitis in vitro* at a concentration 1,500 μgm. per ml., is reported from the Kern General Hospital, Bakersfield, California [1, No. 2263a], to be suitable for use in clinical trials in cases of disseminated coccidioidomycosis.

1006. Gephardt (M. C.) & Hanlon (T. J.). **Treatment of disseminated coccidioidomycosis with stilbamidine (case history).**—*J. Okla. med. Ass.*, 47, 3, pp. 55–58, 4 figs., 1954.

From the Veterans Administration Hospital, Muskogee, Oklahoma, the authors describe the clinical course of a case of disseminated coccidioidomycosis (*Coccidioides immitis*) in a 33-year-old farmer who first developed persistent fever while working on an oilfield at Bakersfield, California, in November 1950. Treatment was supportive until July 1952, when aureomycin was administered for two months with clinical improvement but no objective changes. In the following November a course of stilbamidine (1·95 gm. in 27 days) was instituted but 12 months later there was still evidence of persisting meningeal invasion.

1007. González Ochoa (A.), Hernández (Elena), & Colorado Iris (R.). **Experimentación con vanillato de etilo en dos casos de coccidioidomicosis y uno de micetoma actinomicósico por Nocardia brasiliensis.** [Experiments with ethyl vanillate in two cases of coccidioidomycosis and one of actinomycotic mycetoma caused by *Nocardia brasiliensis*.]—*Rev. Inst. Salubr. Enferm. trop., Méx.*, 13, 4, pp. 265–278, 3 graphs, 1953. [English summary.]

At the Institute for Health and Tropical Diseases, Mexico, experiments were conducted on the use of ethyl vanillate against actinomycotic mycetoma

(*Nocardia brasiliensis*) in a 42-year-old shoemaker, and coccidioidomycosis (*Coccidioides immitis*) [1, No. 2263a] in a 16-year-old student and a 32-year-old farm worker. *N. brasiliensis* was inhibited in *in vitro* tests by a concentration of 50 μgm. per 100 ml. and both strains of *C. immitis* by 12 μgm. However, the drug was administered orally for 40 days without positive results because in each case it was impossible to maintain the blood concentration at the level required for *in vitro* inhibition.

1008. González Ochoa (A.) & Rosiles (H.). **Probable curación de un caso de granuloma coccidioidomicosico por la hidroxicloroquina.** [The apparent cure of a case of coccidioidomycotic granuloma by hydroxychloroquin.]—*Rev. Inst. Salubr. Enferm. trop., Méx.*, 13, 4, pp. 261–263, 1953. [English summary.]

The authors report from the Mycological Laboratory of the Institute for Health and Tropical Diseases, Mexico, the apparent cure of a case of coccidioidomycosis (*Coccidioides immitis*) [2, No. 514] in a 16-year-old male student by administering two 250 μgm. hydroxychloroquin (Win 1258–2 of Winthrop Products Inc.) tablets daily. After 40 days the ulcers had healed completely and there were no toxic effects from continuing the treatment up to 60 days. Early treatment with ethyl vanillate [2, No. 743] had been unsuccessful.

1009. Hage (J. T.) & Moulton (J. E.). **Skeletal coccidioidomycosis in Dogs.**—*Cornell Vet.*, 44, 4, pp. 489–500, 14 figs., 1954.

This is a report from the School of Veterinary Medicine, University of California, Davis, on the clinical, laboratory, X-ray, and autopsy findings in four chronic cases (of 80 to 231 days' duration) of skeletal coccidioidomycosis in dogs [2, Nos. 103, 744].

1010. Maddy (K. T.). **Coccidioidomycosis in a Sheep.**—*J. Amer. Vet. med. Ass.*, 124, 927, p. 465, 2 figs., 1954.

A post-mortem examination of a one-year-old ewe at a packing-house in San Francisco, California, revealed the presence of *Coccidioides immitis* [1, No. 1155] in a pulmonary lymph node lesion, the second case of this nature to be reported from the United States (*Proc. Soc. exp. Biol., N.Y.*, 26, p. 534, 1929).

1011. Maddy (K. T.). **Coccidioidomycosis of Cattle in the southwestern United States.**—*J. Amer. vet. med. Ass.*, 124, 927, pp. 456–464, 5 figs., 1 map, 1954.

Bovine coccidioidomycosis (*Coccidioides immitis*) [1, Nos. 1155, 1156, 1815] is described and 3,173 cases are reported from various parts of California. Investigations carried out by the United States Bureau of Animal Industry in Los Angeles and San Francisco, California, indicate that dusty feeding areas are the most common source of infection, which does not, however, cause morbidity or mortality. Lesions in the pleural cavity and in the submaxillary, nitropharyngeal, and mesenteric lymph nodes are recorded for the first time, 15 per cent. showing some degree of calcification. Both man and animals acquire the infection from dust, but they are not directly infective to each other.

1012. Minton (R.), Young (R. V.) & Shanbrom (E.). **Endobronchial geotrichosis.**—*Ann. intern. med.*, 40, 2, pp. 340–343, 1954.

Two cases of endobronchial geotrichosis are described from the Gorgas Hospital, Ancon, Canal Zone. In a 53-year-old painter, scrapings and sections of the mucosa obtained during bronchoscopy revealed *Geotrichum* sp. both

microscopically and in culture. The peculiarly tenacious and mucoid sputum of a 54-year-old male also yielded cultures of a *Geotrichum*. In both patients the disease responded to potassium iodide therapy.

1013. McDiarmid (A.) & Austwick (P. K. C.). **Occurrence of Haplosporangium parvum in the lungs of the Mole (Talpa europaea).**—*Nature, Lond.*, 174, 4435, pp. 843–844, 1 fig., 1954.

Spherules closely resembling those of *Haplosporangium parvum* were observed in the lungs of numerous moles [cf. 1, No. 1673] found dead and dying on the Berkshire Downs in the spring of 1947 and 1953; many of them showed evidence of pneumonia. This infection makes a new host record and a new record for Europe. Several moles trapped in the Exeter district in May 1954 had lung lesions which yielded typical *H. parvum* in culture. Of 31 apparently healthy moles from Devon and Berkshire 25 had various numbers of lung spherules which yielded isolates agreeing with the northern strain of the fungus [1, No. 2433]. The role of *H. parvum* in the periodic fluctuations of the mole population of Britain is complicated by the presence in the lungs examined by the authors of a nematode and a species of *Nocardia*. The significance of these, especially in apparently healthy animals, is not understood.

1014. Enerson (D. M.), Humphreys (E. H.), & Adams (W. E.). **The pulmonary pathology of histoplasmosis.**—*Proc. Inst. Med. Chicago*, 19, 14, pp. 306–307, 1953.

Six cases of histoplasmosis (*Histoplasma capsulatum*) are presented to demonstrate the variety of pulmonary lesions produced under different conditions of host resistance. The first patient was unsuccessfully treated by lobectomy for a chronic apical cavity for years considered to be tuberculosis but proved pre-operatively to be histoplasmosis. *H. capsulatum* produced a mycotic endocarditis in another patient. A third patient, who died of adrenal histoplasmosis, had several quiescent pulmonary lesions containing dead *H. capsulatum* and two larger, chronic pulmonary torulosis [*Cryptococcus neoformans*] nodules. A 63-year-old man and a ten-year-old boy had acute disseminated histoplasmosis with the organism present in great numbers in masses of alveolar macrophages, but only rare, tubercle-like lesions. In the sixth case, host resistance was evidently depressed by co-existing Hodgkin's disease, the organism occurring in alveolar macrophages, septa, and even in the pulmonary capillaries with virtually no tuberculoid response.

1015. Andersen (H. A.). **Histoplasmosis.**—*Journal—Lancet*, 72, 4, pp. 208–209, 2 figs., 1952.

This is a full case report of histoplasmosis (*Histoplasma capsulatum*) in a 54-year-old carpenter in Minnesota, diagnosed by culture of the pleural fluid, confirmed by a cutaneous sensitivity test, and apparently cured by bed rest.

1016. Alés Reinlein (J. M.) & Ríos Mozo (M.). **Histoplasmosis.**—*Rev. clín. esp.*, 51, 4, pp. 209–219, 10 figs., 1953. [Spanish.]

This is a survey and discussion of 131 contributions to the literature on the etiology, epidemiology, diagnosis, differential diagnosis, prognosis, and therapy of histoplasmosis (*Histoplasma capsulatum*).

1017. Gass (R. S.) & Zeidberg (L. D.). **Diagnostic aids in histoplasmosis.**—*Amer. Rev. Tuberc.*, 70, 2, pp. 360–362, 1954.

A case of pulmonary histoplasmosis (*Histoplasma capsulatum*) in a 59-year-old man is described from the Tennessee Department of Public Health

Franklin, Tennessee. The onset was acute, three days after cleaning out a chicken house, and it is suggested that chicken manure was the source of infection. The lung X-rays suggested miliary tuberculosis, but the patient's tuberculin reaction was negative and the lungs cleared completely in four months with symptomatic treatment only. The histoplasmin test was converted from negative to positive two months after the onset of the illness and the response to the precipitin and complement fixation tests increased and subsequently waned. The causative organism was never found, either microscopically or by culture. It is suggested that, despite negative microbiological evidence, a combination of findings similar to that described should be taken as positive evidence for a diagnosis of histoplasmosis, especially in an endemic area.

1018. Jean (R.). **Formes curables et formes pulmonaires de l'histoplasmose infantile.** [Curable and pulmonary forms of infantile histoplasmosis.]—*Arch. franç. Pédiat.*, 10, 6, pp. 595–603, 6 figs., 1953.

This is a review of 27 contributions to the literature on various forms of juvenile histoplasmosis (*Histoplasma capsulatum*).

1019. Franzen (J.) & Tilling (W.). **Zum Röntgenbild der pulmonalen histoplasmose.** [On the X-ray picture of pulmonary histoplasmosis.]—*Fortschr. Röntgenstrahl.*, 79, 5, pp. 633–638, 1 fig., 1953. [English, French, and Spanish summaries.]

A case of healed, benign pulmonary histoplasmosis (*Histoplasma capsulatum*) in a 44-year-old patient is reported from the Medical Clinic of the Johannes Gutenberg University, Mainz, Germany. He had been a prisoner of war in Kansas for 1½ years and presented a characteristic X-ray picture. In cases simulating tuberculosis where the presence of bacilli cannot be demonstrated, of 'pneumonia' without the well-known micro-organisms, and of supposed bronchial carcinoma unsupported by a definite diagnosis, the possibility of pneumomycosis should be considered and a search for fungi made.

1020. Vivian (D. N.), Weed (L. A.), McDonald (J. R.), Clagett (O. T.), & Hodgson (C. H.). **Histoplasmosis: clinical and pathologic study of 20 cases.**—*Surg., Gynec., Obstet.*, 99, 1, pp. 53–62, 4 figs., 1954.

This is a tabulated survey and discussion of the 20 cases of histoplasmosis (*Histoplasma capsulatum*) diagnosed at the Mayo Clinic, Rochester, Minnesota, of which 11 were fatal and three are described in detail. The variability of the clinical manifestations is emphasized, and frequent involvement of the adrenal glands suggests the possible implication of the fungus in supposed cases of Addison's disease. Patients with isolated pulmonary lesions have been found to respond favourably to surgical treatment. Where oropharyngeal lesions or renal involvement are present the prognosis appears to be poorer than in the absence of these findings. Enriched media containing antibiotics proved to be more satisfactory than Sabouraud's for the culture of *H. capsulatum*.

1021. Ritter (Cassandra). **Studies of the viability of Histoplasma capsulatum in tap water.**—*Amer. J. publ. Hlth*, 44, 10, pp. 1299–1304, 4 figs., 3 graphs, 1954.

The viability of *Histoplasma capsulatum* [2, No. 534] in sterilized tap water (from the Kansas River) stored at temperatures normal in nature was studied at the University of Kansas, Lawrence, Kansas. Survival was demonstrated by cultural means after 306 days at 25° C., 95 days at 34°, and 62 days at 37°, and confirmed by animal inoculations with water suspensions of the yeast

phase [cf. 1, No. 1700] stored for 621 days at 4° and 550 days at 20°. When the mycelial phase was used as inoculum, the fungus survived 42 days at 4°, 217 days at 20°, 245 days at 25° and 34°, and 269 days at 37°. No viable cells remained after three days at 45°. More colonies developed on artificial media from water held at 20° and 25° than at other temperatures. The fungus survived alternate freezing and thawing for 198 days and existed in triple distilled water for 28 days. The evidence suggests conversion from the yeast phase to the mycelial and that the growth of the latter occurs in water. The fungus would appear to be capable of surviving long periods in natural waters.

1022. Kier (J. H.), Campbell (Charlotte C.), Ajello (L.), & Sutliff (W. D.). **Acute bronchopneumonic histoplasmosis following exposure to infected garden soil.**—*J. Amer. med. Ass.*, 155, 14, pp. 1230–1232, 1 fig., 1954.

From the Veterans Administration Medical Teaching Group Hospital, Memphis, Tennessee, a case of acute multifocal pulmonary histoplasmosis in a 26-year-old white man is described in which recovery was complete. The patient showed a delayed skin sensitivity to histoplasmin but complement fixation tests were relatively high by the seventh day. There were cross-reactions with blastomycosis antigens but results with coccidioidin were negative. Cultures for pathogenic fungi were carried out only after the patient's temperature had returned to normal and were negative.

Ten days prior to onset of the disease the patient had sifted a load of soil obtained from a local farmer. By injecting suspensions of soil intraperitoneally into mice, *Histoplasma capsulatum* was isolated from samples of soil from the patient's flower-beds and from one of five samples from the farm at which he had obtained the soil.

The authors call attention to the frequency of dust inhalation, as a mode of infection in histoplasmosis [1, No. 2451; 2, Nos. 304, 400].

1023. Zeidberg (L. D.). **A theory to explain the geographic variations in the prevalence of histoplasmin sensitivity.**—*Science*, 119, 3097, p. 654, 1954.

At the Tennessee Department of public Health, Franklin, the author found a marked correlation, both in the United States and elsewhere, between areas where a high percentage of the population are sensitive to histoplasmin and those where red-yellow podsolic soils occur. Soil being the probable reservoir for *Histoplasma capsulatum* [see preceding entry], it is suggested that the red-yellow podsols are the most favourable for its growth in nature.

1024. Jackson (D.). **Pulmonary histoplasmosis.**—*Tex. St. J. Med.*, 48, 12, pp. 812–816, 2 figs., 1 map, 1952.

Information is summarized on the epidemiology, etiology, pathology, diagnosis, and treatment of pulmonary histoplasmosis (*Histoplasma capsulatum*), with special emphasis on its analogies with tuberculosis. Two cases are reported from Texas, each illustrating a general type of the disease: one in a 46-year-old male, in whom the numerous calcified densities were small, round, uniform, symmetrical, and widespread, resembling healed haematogenous tuberculosis or 'buckshot', and the other in a 21-year-old female, representing a group characterized by fewer irregularly outlined, asymmetrically distributed calcified deposits of varying dimensions.

1025. Wahi (P. N.). **Studies of the role of fungi in pulmonary disease.**—*Agra Univ. J. Res. (Sci.)*, 1, pp. 205–224, 1 pl., 3 graphs, 1952. [Received November 1954.]

In view of the considerable increase in recent years in cases of negative reactors to tuberculin suffering from pulmonary calcification, X-ray photo-

graphs were taken at Agra, India, of the chests of 957 persons aged from under five to over 25 years, while cutaneous tests were performed to determine their sensitivity to histoplasmin, tuberculin, and coccidioidin. There were 696 (72·7 per cent.) positive reactors to tuberculin, 19 (1·98) to histoplasmin, and none to coccidioidin; in 406 (43·1 per cent.) pulmonary calcification was demonstrated. The highest percentage of tuberculin and histoplasmin reactors occurred in the over-25 age group (90·3 and 5·4 per cent., respectively). The maximum incidence of pulmonary calcification (56·4 per cent.) occurred between five and nine years and the minimum (37·5) at 20 to 25.

Calcifications were present in 11 out of 15 subjects who reacted to both histoplasmin and tuberculin, in three out of four responding to histoplasmin only, in 301 out of 681 positive to tuberculin only, and in 91 out of 257 negative to both antigens.

1026. Aronson (J. D.) & Taylor (Helen C.). **The geographical distribution of histoplasmin sensitivity in Pennsylvania.**—*Penn. med. J.*, 56, 7, pp. 543–547, 1 map, 1953.

The histoplasmin and tuberculin sensitivity of 13,233 inmates of institutions and the members of a public high school in Pennsylvania [2, No. 535] was determined. A high incidence of histoplasmin sensitivity (unrelated to the tuberculin reaction) was observed among persons resident in the south-eastern counties.

1027. Forbes (G. B.) & Chang (C. C.). **Histoplasmin and tuberculin sensitivity in Texas infants and children.**—*Publ. Hlth. Rep., Wash.*, 68, 3, pp. 320–322, 1 graph, 1953.

During 1951, histoplasmin and tuberculin skin tests were made on 441 children ranging from a few days to 16 years old selected at random from children's homes, out-patients' departments, and hospitals at Dallas, Texas [cf. 2, Nos. 777, 778]. There were 31 and 20 positive reactions to each test, respectively; two children reacted to both. Eight of the positive histoplasmin reactors and 9 of the tuberculin had evidence of pulmonary calcification. A significant degree of relationship between age and histoplasmin sensitivity was noted.

1028. Lee (J. R.) & Kirby (W. M. M.). **Acute benign histoplasmosis.**—*Amer. Rev. Tuberc.*, 69, 4, pp. 625–630, 3 figs., 1954.

The course of a case of acute, benign, pulmonary histoplasmosis (*Histoplasma capsulatum*) in a 19-year-old male is described from the United States Army Hospital, Fort Lawton, Washington. There was severe febrile illness for two weeks with itching skin and erythematous rash, multiple pulmonary infiltrations and hilar odenopathy, clearing slowly and incompletely. Sufficient time had not elapsed for pulmonary calcification to develop. The fungus was not isolated, but the diagnosis was confirmed by serologic tests during convalescence.

1029. Loosli (C. G.), Procknow (J. J.), Tanzi (F.), Grayston (J. T.), & Combs (L. W.). **Pulmonary histoplasmosis in a farm family : a three-year follow-up.**—*J. Lab. clin. Med.*, 43, 5, pp. 669–695, 18 figs., 1954.

During the three years following the development of histoplasmosis (*Histoplasma capsulatum*) in three members of a family of eight residing on a farm in Indiana [1, No. 2281 ; 2, No. 765], the infiltrated areas were shown by radiography to undergo fibrosis and eventual calcification as the clinical symptoms

slowly resolved. Complement fixation titres for the yeast phase of the fungus fell rapidly and antibodies were not detected six months after the onset of the disease, though the histoplasmin skin test remained positive throughout the three-year period. The infection was contracted from an unused silo from which *H. capsulatum* was subsequently isolated.

1030. Matthiesen (D. E.). **The surgical significance of solitary circumscribed lung nodules in histoplasmosis. Report of three cases.**—*Amer. Rev. Tuberc.*, 69, 5, pp. 829–836, 3 figs., 1954.

Three cases of histoplasmosis (*Histoplasma capsulatum*), typified by solitary, circumscribed lung nodules, a 38-year-old woman and two men, one 24 and the other 32 years old, are described from the United States Naval Hospital, Jackson, Florida. Histoplasmosis may be confused with tuberculosis when such calcified lesions are found, but histoplasmosis has less tendency to disseminate than was originally thought, so that surgical resection is often a feasible treatment.

1031. Nielsen (G. E.) & Evans (R. E.). **A study of the sporulation of Histoplasma capsulatum.**—*J. Bact.*, 68, 3, pp. 261–264, 6 figs., 1954.

In studies at the Iowa State Hygiene Laboratory, University of Iowa, a new kind of mature spore was found in a strain of *Histoplasma capsulatum* [cf. 2, No. 543] isolated from a blood specimen from a four-month-old infant. It is heavy, thick-walled, non-tuberculate, and measures from 21·61 to 31·16 by 21·03 to 30·69 μ on Sabouraud's dextrose agar and broth. It is referred to as a nimbospore from the halo- or cloud-like appearance of the gelatinous, apparently many-layered wall (11 to 12 μ thick). Similar spores, but smaller and fewer, were produced by three out of five other strains of the fungus, cultures of which were still viable after two years' incubation.

1032. Parrella (M.). **L'istoplasmosi polmonare.** [Pulmonary histoplasmosis.]—*Arch. Tisiol.*, 7, 7, pp. 237–246, 1952.

After briefly reviewing the history of investigations into histoplasmosis (*Histoplasma capsulatum*) and noting its geographical distribution, the author gives a general account of the disease with special reference to the pulmonary form, based on the literature (35 titles), under the main headings: causal organism, pathological anatomy of the disease, clinical forms, diagnosis, and treatment.

1033. Peeples (W. J.) & Spence (M. J.). **Pulmonary cavitation due to Histoplasma capsulatum.**—*Amer. Rev. Tuberc.*, 69, 1, pp. 111–115, 3 figs., 1954.

A first proved case of histoplasmosis (*Histoplasma capsulatum*) in Georgia in a 52-year-old man is reported from the Department of Public Health, Columbus. The diagnosis was at first one of tuberculosis with pulmonary cavitation, despite persistent failure to isolate the organism, but *H. capsulatum* was eventually isolated from the sputum and found on direct smear.

1034. Prior (J. A.), Saslaw (S.), & Cole (C. R.). **Experiences with histoplasmosis.**—*Ann. intern. Med.*, 40, 2, pp. 221–244, 12 figs., 1954.

From the Departments of Medicine and Veterinary Pathology, Ohio State University, the authors report four cases of canine histoplasmosis (*Histoplasma capsulatum*) proved by culture or biopsy or both and three established by serological tests. The wide variety of symptoms presented by different cases is discussed. Out of a total of 5,370 dogs admitted to the veterinary clinic,

62 were also shown to be suffering from histoplasmosis, and it was noted that a positive histoplasmin reaction more often denoted active infection in dogs than in man. Experimental histoplasmosis was regularly induced by intratracheal injection of the yeast phase or of the mycelial accompanied by cortisone.

1035. **Clinical pathologic conference : disseminated histoplasmosis.**—*J. Iowa St. med. Soc.*, 42, 11, pp. 535–540, 6 figs., 1952.

A fatal case of disseminated histoplasmosis (*Histoplasma capsulatum*) in a four-month-old girl is described from the State University of Iowa College of Medicine. The fungus was cultured from the bone marrow before death. At necropsy, disseminated infection of a granulomatous type was found, involving reticuloendothelial tissues, including the lungs, spleen, liver, bone marrow, lymph nodes, adrenals, and kidneys. The patient was taken to California when six weeks old.

1036. Battigelli (G.), Zmajevich (G.), & Ritter (F.). **Contributo alle ricerche sulla sensibilità cutanea all'istoplasmina.** [Contribution to the studies on cutaneous sensitivity to histoplasmin.]—*Rass. giul. med., Trieste*, 8, 10–12, pp. 203–206, 1952.

In a co-operative study between the Ospedale Ausiliario di S. Giovanni and the Centro Profughi Tuberculotici, Trieste, a test was made of the cutaneous histoplasmin sensitivity of 208 patients ranging from 14 to 79 years, some suffering from tuberculosis and others with apparently non-tubercular calcifications in one or both lungs. There was only one doubtfully positive reaction.

1037. Halde (Carlyn) & Reyes (A. C.). **Histoplasmin and coccidioidin testing in a Philippine tuberculosis hospital.**—*Amer. J. trop. Med. Hyg.*, 2, 4, pp. 655–657, 1953.

In January 1951, 824 patients at Quezon Institute, near Manila, Philippines, were tested with histoplasmin and coccidioidin. There were no positive reactors to coccidioidin but 26 (3·15 per cent.) developed a response to histoplasmin.

1038. Buzo Rodriguez (T.), Osimani (J. J.), Santoro (A.), Canon (E.), & Gurri (J.). **Un nuevo caso de histoplasmosis. Estudio de la cepa aislada. Revista crítica de la afección en nuestro medio.** [A new case of histoplasmosis. Study of the strain isolated. Critical review of the disease in our environment.]—*Arch. urug. Med.*, 43, 5–6, pp. 277–292, 5 figs., 1953. [English summary.]

Following a summary of the three published and two unpublished cases of histoplasmosis (*Histoplasma capsulatum*) in Uruguay [1, Nos. 314, 1405, 1896], the authors fully report the clinical and mycological aspects of a further case, involving the bucco-pharyngeal region only, in a 44-year-old male resident in Montevideo. Two relapses occurred during the three years of observation, but at the time of writing the patient was in good health after an 18-month course of sulphadiazine therapy.

1039. Negro (G. de L.), Veronesi (R.), & Figueiredo (M. de A.). **Histoplasmose generalizada e moléstia de Hodgkin.** [Generalized histoplasmosis and Hodgkin's disease.]—*Rev. paul. Med.*, 43, 4, pp. 291–304, 4 figs., 1953. [English summary.]

From the Clinic of Tropical and Infectious Diseases, São Paulo, the authors

describe a case of histoplasmosis (*Histoplasma capsulatum*), the ninth record for Brazil, in a 16-year-old female. Diagnosis was only established at autopsy, when Hodgkin's disease was also revealed by histopathological examination, this being the first report of its association with histoplasmosis. The difficulty of differential diagnosis of histoplasmosis by histopathology alone is emphasized, cultures being essential to distinguish it from leishmaniasis, certain forms of *Paracoccidioides brasiliensis*, and toxoplasmosis.

1040. Hood (S. I.) & Cornejom (B.). **La intradermo-reacción de histoplasmina en Perros de la ciudad de Santiago.** [The intradermal histoplasmin reaction of Dogs in Santiago city.]—*Rev. Med. vet. Santiago*, 2, 8, pp. 39–46, 2 figs., 1953.

Intradermal injections in 300 dogs of various breeds, ages, and states of health from all parts of Santiago city revealed complete freedom from histoplasmosis (*Histoplasma capsulatum*) [cf. 2, No. 333]. Nevertheless, in view of the recent first record of a human case in Chile, the relatively small number of dogs tested, and the limited area covered, the possibility of the disease being present is not excluded.

1041. Rowley (D. A.), Haberman (R. T.), & Emmons (C. W.). **Histoplasmosis : pathologic studies of fifty Cats and fifty Dogs from Loudoun County, Virginia.** —*J. infect. Dis.*, 95, 1, pp. 98–108, 2 figs., 1 map, 1954.

In 1952 *Histoplasma capsulatum* was isolated from 22 out of 50 dogs and 22 out of 50 cats from widely distributed localities in Loudoun County, Virginia [1, No. 950], which covers an area of some 517 sq. miles. In both lots of animals the cervical and peribronchial lymph nodes were the most frequently affected sites, and dissemination of the fungus occurred in eight cats and nine dogs.

There was only one positive reactor to the histoplasmin (1 in 100) skin test among the cats, and none of the sera from these animals contained agglutinins or collodion particles sensitized with histoplasmin or complement-fixing antibodies for the whole-yeast phase antigen of *H. capsulatum*. None of the tissue sections from cats yielded the pathogen. Among the dogs, 14 reacted positively to the skin test, 27 had agglutinin titres of 1 in 20 or higher for histoplasmin-sensitized collodion particles, and 15 had complement-fixation titres of 1 in 15 or higher for the whole-yeast phase antigen. Tissue sections from eight dogs contained the fungus.

1042. Verge (J.), Paraf (A.), & Bertrand (C.). **La réaction à l'histoplasmine chez le Cheval et chez le Chien.** [The reaction to histoplasmin in the Horse and in the Dog.]—*C.R. Soc. Biol., Paris*, 148, 9–10, pp. 811–912, 1954.

Uniformly negative results were obtained in cutaneous histoplasmin tests performed in 1952 and 1953 at the Veterinary College, Alfort, France, on 68 equines and 51 dogs.

1043. Ffrench (G.) & Shenoi (V.). **Disseminated moniliasis with demonstration of the organism in the blood.**—*Canad. med. Ass. J.*, 71, 3, pp. 238–241, 2 figs., 1954.

A case of disseminated moniliasis (*Candida albicans*) in a 33-year-old male Tamil is reported from the Kolar Gold Field Hospital, Champion Reep P.O., South India. The detection of organisms in the white cells of the blood (in which *C. albicans* has not previously been recorded) led to *Histoplasma capsulatum* being suspected as the cause, and the true diagnosis was only established at the autopsy, which revealed the characteristic miliary granulomatous and necrotic lesions with a well-developed haemochromatosis.

1044. Auckland (G.) & Preston (W. J.). **Non-specific urethritis: is mycotic infection important?**—*Brit. J. vener. Dis.*, 30, 2, pp. 81–87, 1954.

Investigations during the course of one year at a venereal diseases clinic in Manchester revealed that mycotic urethritis is much commoner than has hitherto been thought, fungal elements being found in genito-urinary secretions of 36 male patients. In 30 cases these were the only abnormalities detected and it is thought they were responsible for the urethritis.

1045. Bakerspigel (A.). **A preferred method for the routine identification of Candida.**—*J. infect. Dis.*, 94, 2, pp. 141–143, 1954.

Experiments involving hundreds of strains of *Candida* spp., carried out at the Provincial Laboratory of Public Health, University of Alberta, Edmonton, Canada, showed that the fermentation reactions of the yeasts were inconsistent and failed to provide a satisfactory basis for identification. Their morphology, however, particularly the production of chlamydospores on yellow maize meal agar by *C. albicans* [2, Nos. 564, 567], afforded a more rapid and reliable method of determination. After detection in smears stained with methylene blue and basic fuchsin, and isolation on Sabouraud's glucose agar with the substitution of phytone for peptone, the yeasts were sown under coverslips on a medium made from the supernatant from 40 gm. yellow maize meal boiled for two minutes in water, made up to 1,000 ml., 15 gm. agar added, and the pH adjusted to 6·2. The various species could be identified in one to three days.

1046. Thjøtta (I.), Jonsen (J.), & Rasch (S.). **Quantitative agglutination studies in fungi. 2. Serological relationship between C. albicans and C. stellatoidea.**—*Acta path. microbiol. scand.*, 33, 1–4, pp. 86–91, 1953.

Data are provided showing the applicability of the agglutination technique by systems involving fungi and their antibodies in rabbit serum [2, No. 569]. The results herein reported indicate that *Candida albicans*, *C. stellatoidea*, and *C. pseudotropicalis* are serologically identical with the 'type' strain of the same species obtained from the Centraalbureau voor Schimmelcultures, Delft. The first two are among species most capable of cross-reacting. Quantitative results show them to be closely related [cf. 1, No. 1823] and distinctly different from any other species of *Candida*. In weak antisera the species could be considered identical, but with hyper-immune sera small, antigenic differences of significant value are obtained. The great similarity between *C. stellatoidea* and *C. albicans* is of special interest with reference to the suggested derivation of the former from the latter.

1047. Bakerspigel (A.). **Soil-extract agar for Candida albicans.**—*Arch. Derm. Syph., Chicago*, 69, 6, pp. 735–737, 5 figs., 1954.

At the University of Alberta, Canada, a medium made from an autoclaved extract of fine sandy loam was found to be as satisfactory for the identification of various species of *Candida* as yellow maize meal agar [2, No. 96].

1048. Drouhet (E.) & Couteau (Monique). **Facteurs vitaminiques de croissance de Candida.** [Vitaminic growth factors of *Candida*.]—*C.R. Acad. Sci., Paris*, 239, 23, pp. 1675–1677, 1954.

Of 66 strains of *Candida* of human origin examined, 63 (including 35 of *C. albicans* and ten of *C. tropicalis*) were unable to grow in the absence of biotin. *C. pseudotropicalis* requires nicotinic acid in addition to biotin, while thiamine, pyridoxine, and nicotinic acid are also essential for the development of certain strains of *C. krusei*.

1049. Ruiz Moreno (G.). **Candide alérgica facial.** [Facial allergic disease due to *Candida.*]—*Clin. lat., Tor.*, 2, 2, pp. 138–146, 1952. [French and English summaries.]

In the course of a six years' research at the National Academy of Medicine, Buenos Aires, the author discovered the etiology and pathogenesis of a form of bilateral palpebral symmetrical dermatitis hitherto of undetermined origin and for which no treatment was known. All aspects of the disease are discussed and it is concluded that the disease is an allergic infection caused by the distant action of *Candida albicans* present in the intestines or other mucous membranes. Subcutaneous injections with candidin (a filtrate of a *C. albicans* culture) resulted in a complete cure.

1050. Bass (B. H.), MacFarlane (R. G.), & Phillips (T.). **Bilateral haemorrhagic effusion complicating acute pulmonary moniliasis.**—*Lancet*, 266, 6814, pp. 709–710, 1954.

This is a report from the Military Hospital, Tidworth, of a case of bilateral pneumonia which did not respond to sulphonamides, penicillin, or aureomycin. *Candida albicans* was isolated from the sputum. Treatment with potassium iodide brought about a rapid cure.

1051. Di Paola (G.) & Vasquez Ferro (E.). **Vulvovaginitis moniliasica.** [Vulvovaginitis due to *Monilia.*]—*Prensa méd. argent.*, 39, 10, pp. 440–444, 6 figs., 1952.

Details are provided of the symptoms and diagnosis of, and current methods of treatment for, vulvovaginitis due to *Candida albicans* [cf. 2, No. 106].

1052. Emdin (W.) & Finlayson (M. H.). **Moniliasis of the central nervous system in a child with recovery.**—*S. Afr. med. J.*, 28, 41, pp. 868–871, 1 fig., 1954.

A case of moniliasis (*Candida albicans*) [2, No. 559] of the central nervous system in a four-year-old sturdy boy is reported from the Victoria Hospital, Wyneberg, Cape Town, South Africa. The virulent fungus was recovered from the cerebrospinal fluid and from a hyperkeratotic lesion almost an inch in diameter on the upper lip. Complete recovery with marked improvement was obtained after the intravenous injection of gentian violet, which is now recommended for use with other therapeutic measures against systemic moniliasis, particularly where the central nervous system is involved.

1053. Pluss (J. M.) & Kadas (L.). **A case of monilial granulomas associated with widespread superficial moniliasis and epidermophytosis.**—*J. invest. Derm.*, 23, 5, pp. 317–328, 6 figs., 1954.

A 32-year-old man, seen at the Skin and Cancer Unit of the New York University Hospital, was found to be suffering from oral thrush and moniliasis of the finger-nails, both of which had begun in infancy; in addition he bore hyperkeratotic masses covering both feet and ankles, together with an oozing, foul-smelling growth inside the right ankle, all of which had been developing over the last 14 years. Furthermore he had a heavy crusting of the scrotum and inner thigh for three years, accompanied later by discrete, scaly eruptions on the chest, arms, and groins. *Candida albicans* was isolated from all the lesions except those of the chest, groins, left arm, and left leg, which gave rise to colonies of *Epidermophyton floccosum.* It is thought that this is the first recorded case of dual infection by these organisms. The *E. floccosum* lesions were easily cleared with topical therapy, but those from which *C. albicans* was isolated were resistant to all treatment. When excision and skin-grafting of

the lesions of the feet were resorted to there was a temporary improvement, but infection from the untouched skin soon spread over the grafted areas. Inoculation of clean skin with the patient's own strains of the two fungi resulted in the immediate formation of lesions, but inoculation with laboratory strains did not take. It is suggested that the patient had a peculiar susceptibility to his own strain of *C. albicans*, coupled with an unusual reaction to his own strain of *E. floccosum*.

1054. Rees (R. B.). **Anogenital moniliasis.**—*Calif. Med.*, 80, 2, pp. 95–97, 1954.

This is a report from the University of California School of Medicine, San Francisco, on 30 cases of anogenital moniliasis (*Candida albicans*) in patients ranging from eight to 70 years of age, 23 being females. In five the complaint was preceded by oral therapy with broad-spectrum antibiotics. The most effective treatments were 1 per cent. aqueous gentian violet, 0·1 per cent. gentian violet jel, or mercurials applied locally, resulting in 23 cures and two improvements.

1055. Rioux (J.-A.), Verdier (P.), & Plane (J.). **Sur la fréquence des infestations saprophytiques à Candida chez les tuberculeux pulmonaires.** [The frequency of saprophytic infestations by *Candida* in subjects with pulmonary tuberculosis.] —*Poumon*, 10, 2, pp. 101–106, 1954.

Candida albicans was isolated from the sputa of 24·3 per cent. of 266 patients with pulmonary tuberculosis in three sanatoria at Montpellier, France. In one of these (the Laënnec, for consumptives), among 147 patients the fungus was harboured by 20·8 per cent. of the males and 22·2 per cent. of the females. At the Bellevue Sanatorium 43 per cent. of the 82 women with bacilliferous sputa were also carriers of *C. albicans* as against 29 per cent. of those without bacilli. Taking the three sanatoria as a whole, the fungus occurred in the sputa of 44 per cent. of the patients receiving streptomycin compared with 31 per cent. of those not so treated, but this slight increase is attributed rather to the severity of the clinical symptoms than to the action of the antibiotic.

1056. Park (D. R.), Desmond (M. M.), & Fahlberg (W. J.). **Monilia onychia. Report of a case in a 51-day-old premature infant.**—*J. Pediat.*, 44, 3, pp. 313–316, 3 figs., 1954.

The first case of monilia onychia in an infant is reported from the Baylor University College of Medicine and the Jefferson Davis Hospital, Houston, Texas. The 51-day-old premature girl was known to be suffering from oral thrush 45 days prior to the onset of the nail symptoms, and had also received antibiotics during this period. The affected finger- and toe-nails were laminated, ridged, friable, and brownish-yellow, and yielded *Monilia* [? *Candida albicans*] in culture. The symptoms had virtually disappeared without treatment when the patient was 67 days old.

1057. Soucheray (P. H.). **Farmer's lung. A form of bronchopulmonary moniliasis.** —*Minn. Med.*, 37, 4, pp. 251–253, 1 fig., 1954.

Three cases of chronic pulmonary disease presenting certain analogies with 'farmer's lung' (*Candida albicans*) [2, Nos. 253, 1058] are reported from St. Paul, Minnesota. Each patient gave a history of exposure to the dust from mouldy silage, suffered for a period of months from dyspnoea and cough, and improved on removal from his environment. It is emphasized, however, that the diagnosis of primary pulmonary moniliasis was not definitely established in these patients.

1058. Sweeney (P. J.). **Farmer's lung ; a clinical account of a disease probably caused by fungi.**—*Ulster med. J.*, 21, 2, pp. 150–154, 2 figs., 1952.

Four cases of farmer's lung in adult male farm workers are described, and others mentioned, from the Fermanagh County Hospital, Enniskillen, Ireland. In all of them the progress of the disease suggested a fungus infection of the lung, and this view was supported by the histories of exposure to dust from hay, which was probably heavily infected by fungi, the diffuse opacities in the lung fields, and the absence of other infecting agents. Heavy growths of *Monilia* [*Candida*] *albicans* [2, No. 1057] were obtained from the sputum of all the patients, and the response to iodides was immediate and almost diagnostic in itself.

1059. Schürmann (R.). **Über Soormykosen nach antibiotischer Behandlung.** [On thrush mycoses following antibiotic therapy.]—*Aertzl. Wschr.*, 8, 30, pp. 719–721, 1 fig., 1953.

The findings of three autopsies—two on infants and one on a 38-year-old male—are reported from the Institute of Pathological Anatomy of the University of Concepción, Chile, to illustrate the risk of infection by the thrush fungus [*Candida albicans*] as a sequel to inappropriate antibiotic therapy, which destroys the antagonistic symbionts of the fungus and so permits its uncontrolled development [cf. 2, Nos. 806, 808, 824].

1060. Rossi (R.). **Monilie ed antibiosi. Terapia delle moniliasis. (Contributo sperimentale.)** [Moniliae and antibiosis. Therapy of moniliases. (Experimental contribution.)]—*Riv. Clin. pediatr.*, 52, 6, pp. 529–540, 1953. [French and English summaries.]

After a discussion of the frequency of thrush (*Monilia* [*Candida*] *albicans*) before and since the era of antibiosis and a review of current opinion as to the stimulatory influence of antibiotics on the disease, the author describes his experiments at the Pediatric Clinic of the University of Florence, Italy, on the treatment of inoculated rabbits by intravenous injections of methyl violet. Prevention of the spread of infection could be accomplished only by the administration of doses toxic to the animals.

1061. Pesle (G. D.) & Labéguerie (M.). **Deux cas de moniliase digestive au cours de traitement par l'isoniazide.** [Two cases of digestive moniliasis in the course of treatment with isoniazid.]—*Rev. Tuberc., Paris*, 17, 7–8, pp. 881–882, 1953.

In the course of treatment with isoniazid for tuberculosis, two male patients developed digestive troubles and black hypertrophic glossitis ('black hairy tongue') associated with infection by *Candida albicans*. This is believed to be the first record of complications in antibiotic therapy due to the administration of isoniazid.

1062. Forni (P. U.). **Antistaminici e micosi sperimentale da Candida albicans.** [Anti-histaminics and experimental mycoses due to *Candida albicans*.]—*Boll. Soc. ital. Pat.*, 3, 1, pp. 14–16, 1 graph, 1953. [Abs. in *Excerpta med., Amst.*, Sect. XIII, 8, 9, p. 359, 1954.]

At the Institute of General Pathology of Turin University, Italy, a synthetic anti-histaminic, dimethylamino-ethylbenzylaniline, markedly reduced resistance in white mice to experimental infection with *Candida albicans*. Thus, at a dose of 4 gm. per kg. body weight, it increased mortality from intraperitoneal inoculation with 10^{-6} blastospores from 20 to 90 per cent.

1063. Franks (A. G.), Taschdjian (Claire L.), & Thorpe (Grace A.). **Effect of candicidin in intertriginous and paronychial moniliasis.**—*J. invest. Derm.*, 23, 2, pp. 75–76, 1954.

The results of treatment of four cases of intertriginous and three of paronychial moniliasis (*Candida albicans*) at the New York University Hospital with candicidin A and B [2, No. 1072] were as follows. The three new cases of intertrigo were cured in ten days, while the fourth, a chronic form, cleared after seven weeks but relapsed a month later; the patients with paronychia failed to show improvement after three months' treatment.

1064. Janke (R. G.). **Studien über die Antibiotika Wirkung bei Sprosspilzen.** [Studies on the action of antibiotics on budding fungi.]—*Zbl. Bakt.*, Abt. 1 (Orig.), 160, 7–8, pp. 628–636, 2 graphs, 1954.

Evidence is summarized and tabulated from the author's experiments at the University Clinic for Skin Diseases, Vienna, and from 14 contributions to the relevant literature that the development of yeast-like fungi, e.g., *Candida albicans*, is directly stimulated by penicillin, aureomycin, and terramycin therapy, quite apart from the indirect effects associated with suppression of the antagonistic bacteria.

1065. Kutscher (A. H.), Seguin (Lucille), Lewis (S.), Piro (J. D.), & Zegarelli (E. V.). **Growth inhibiting properties of phenoxy-ethyl-dimethyl-dodecyl-ammonium bromide (PDDB) (bradosol) against Candida albicans in vitro (preliminary report).**—*Antibiot. & Chemother.*, 4, 10, pp. 1045–1049, 1954.

In tube dilution experiments at the Departments of Dentistry and Bacteriology, Francis Delafield Hospital, New York, bradosol (the trade name of Ciba Pharmaceutical Products, Inc., Summit, New Jersey, for phenoxy-ethyl-dimethyl-dodecyl-ammonium bromide) inhibited the growth of 18 pathogenic strains of *Candida albicans* at concentrations ranging from 1 in 48,000 to 1 in 192,000.

1066. Long (L. M.) & Troutman (H. D.). **Chloromycetin. Synthesis of α-dichloroacetamido-β-hydroxy-*p*-nitropropiophenone.**—*J. Amer. chem. Soc.*, 73, 1, pp. 481–482, 1951.

At the Research Laboratories of Parke, Davis & Co., Detroit, Michigan, the racemate of a dehydro derivative of chloramphenicol, obtained by the substitution of a dichloroacetyl group for the acetyl in α-acetamido-β-hydroxy-*p*-nitropropiophenone, exerted a remarkable measure of fungicidal potency, a dilution of 1:487,805 (2·05 γ per ml.), for instance, causing 50 per cent. inhibition in the growth of *Candida albicans*.

1067. Magara (M.), Yokouti (E.), Senda (T.), & Amino (E.). **The action of a new antibiotic, trichomycin, upon Trichomonas vaginalis, Candida albicans and anaerobic bacteria.**—*Antibiot. & Chemother.*, 4, 4, pp. 433–438, 1 graph, 1954.

At the Nippon Medical College, Tokyo, Japan, trichomycin (*J. Antibiot.*, 10, p. 564, 1950) inhibited the growth of three strains of *Candida albicans* incubated at 37° C. for 48 or 120 hours and subcultured on Sabouraud's agar at concentrations of 0·0005 and 0·001 mg. per ml., respectively. The antibiotic further gave promising results in clinical trials against vaginal moniliasis.

1068. Marselou (U.) & Segretan (G.). **Action des antibiotiques in vitro sur la croissance des Candida.** [Action of antibiotics *in vitro* on the growth of *Candida* spp.]—*Ann. Inst. Pasteur*, 87, 2, pp. 229–233, 1954.

Penicillin G at concentrations of 10 and 5 units per ml., streptomycin at

200 and 50 μgm., chloramphenicol, aureomycin, and terramycin (all at 250 and 100 μgm.) did not influence the growth in pure culture of two strains of *Candida albicans* and one each of *C. tropicalis* and *C. krusei*. The fungi made least growth on a synthetic medium without thiamine and biotine and developed most abundantly on Sabouraud's glucose without agar; on the synthetic medium enriched by the two growth factors the numbers of cells per ml. were intermediate.

1069. Millberger (H.) & Blank (E.). **Versuche zur Nachprüfung der Wirkung von Mycostatin auf die experimentelle Candida-albicans-Infektion der weissen Maus.** [Experiments for the determination of the action of mycostatin on the experimental *Candida albicans* infection of the White Mouse.]—*Naturwissenschaften*, 41, 21, p. 503, 1954.

The authors' experiments at the main laboratory of Schering A.G., Berlin (West), confirmed the results of other workers as to the efficiency of mycostatin (formerly known as fungicidin or nystatin [2, Nos. 61, 738] and supplied by E. R. Squibb & Sons, Mathiesen Chemical Corporation, New York) in reducing the mortality rate in white mice given parenteral or oral injections of *Candida albicans*.

1070. Nicora (G.). **Sulla profilassi e terapia della moniliasi consecutiva all'uso terapeutico di antibiotici.** [Prophylaxis and therapy of moniliasis following the therapeutic use of antibiotics.]—*Minerva chir.*, 8, 12, pp. 533–536, 1953.

Observation from January 1951 to June 1952, inclusive, at the Obstetric-Gynaecological Clinic of the University of Parma, Italy, on 450 patients submitted to post-operative treatment with various antibiotics showed that in 63 cases (14 per cent.) infection by *Candida albicans* resulted and in 6·5 per cent. was serious. In 36 of these infection was confined to the mouth and tongue, in 21 the fungus had reached the pharynx and the primary air passages, or had caused intestinal or other disturbances; in four the median air passages were affected; and in two there was parotid localization. Seventy patients operated on between 15th October, 1952, and 15th April, 1953, were then treated with a product consisting of l-chloramphenicol and bismuth camphor-carbamate associated with 8-oxyquinoline. The results showed that the new product was not completely satisfactory, but it reduced the percentage rates for all infections from 14 to 6·8 per cent. and for the more serious cases from 6·5 to 1·7 per cent.

1071. Slawson (Marie S.) & Snyder (M. L.). **Mechanism of action of sodium azide on the genus Candida.**—*J. dent. Res.*, 31, 1, pp. 47–52, 1952.

The effectiveness of sodium azide as a selective inhibitor of the yeast-like organisms of the saliva, including *Candida albicans* [1, No. 426], *C. krusei*, *C. parakrusei*, and *C. pseudotropicalis*, was confirmed at the University of Oregon Dental School, Portland. The limit of duration of fungistasis of a 1 in 10,000 concentration in tomato juice-peptone agar was five days at ice-box temperatures. The mechanism of action was shown to operate primarily on the iron-porphyrin pigments, the cytochromes, and the cytochrome oxidases of the fungi.

1072. Tarbet (J. E.) & Sternberg (T. H.). **Microbiological estimation of antifungal blood levels following administration of fungicides.**—*Mycologia*, 46, 3, pp. 263–275, 2 graphs, 1954.

In studies at the Veterans Administration Hospital and the University of California School of Medicine, in which the growth of *Candida tropicalis* in

50 per cent. normal guinea-pig serum containing dilutions of fungicide was applied as a standard, measurement of the anti-fungal activity of guinea-pig serum after intraperitoneal injection of antifungal drugs demonstrated that under the experimental conditions (dose of 16 mg. per kg. for all levels of biological potency of the drug; blood taken three hours after injection), substantial serum concentrations (1·2 to 28 mcg. per ml.) were given by ascosin, candicidin [2, No. 1063], 3-keto-21-piperidyl)—Δ^4-pregnadiene monohydrobromide, nystatin [2, No. 1069], and rimocidin.

1073. Scherr (G. H.). **The effect of cortisone on the course of systemic moniliasis in Mice. I. The efficacious effect of cortisone for severe infections. II. An attempt to reverse the toxic effect of cortisone with lowered environmental temperature or somatotrophic hormone (STH).**—*Mycopathologia*, 6, 4, pp. 325–353, 5 graphs, 1953.

At the Creighton University School of Medicine, Omaha, Nebraska, a mild to moderate moniliasis (*Candida albicans*) in male and female white Swiss mice caused by intraperitoneal inoculation was aggravated by periodical treatment with cortisone acetate, but the increased severity was no greater than was attributable to the deleterious effect of the drug itself upon the animals. Infected males treated periodically with the aqueous vehicle of cortisone developed increased severity of monilial involvement, but females did not. An acute moniliasis induced by suspending *C. albicans* cells in mucin was mitigated for males but not for females by the same schedule of cortisone treatment.

Mice could not be protected by cortisone against the lethal effects of a cold environment if they had previously been infected with moniliasis. Only in female infected mice treated with cortisone and STH ('somatotrofin', Frank W. Horner, Ltd., Montreal) could a reversal of the deleterious effect of cortisone be demonstrated, their mortality being lower than that of infected females treated with cortisone or left untreated. The death rate of severely infected males treated with cortisone was reduced, but this effect was reversed by the combined administration of cortisone and STH.

1074. Blaxland (J. D.) & Markson (L. M.). **Observations on the transmissibility and pathogenesis of moniliasis in Turkey poults.**—*Brit. vet. J.*, 110, pp. 139–145, 2 pl., 1954.

In further experiments at the Ministry of Agriculture and Fisheries Veterinary Laboratory, New Haw, Weybridge, Surrey, to elucidate the etiology and pathogenesis of moniliasis in turkey poults [2, No. 117, cf. also No. 837], enteral and parenteral administration of *Candida albicans* produced infection in most of the inoculated and in-contact poults and subclinical moniliasis in a few. Administration of a suspension of crop scrapings from field cases of the disease gave similar results. No evidence was obtained of the presence of an endotoxin in the fungus. None of the birds used developed symptoms of moniliasis. A survey involving the examination of crops and other organs of clinically healthy poults obtained from farms in various parts of the country demonstrated that *C. albicans* may be present in birds as a commensal and may even cause gross lesions in the crop, without producing any sign of clinical disease. The evidence showed that moniliasis is often associated with bad flock hygiene and inadequate nutrition.

1075. Martin (F. P.), Lukeman (J. M.), Ranson (R. F.), & Geppert (L. J.). **Mucormycosis of the central nervous system associated with thrombosis of the internal carotid artery.**—*J. Pediat.*, 44, 4, pp. 437–442, 4 figs., 1954.

A case of mucormycosis (*Mucor* sp.) in a 2½-month-old male infant, in which

the fungus, as demonstrated microscopically, showed a marked affinity for the blood-vessels, is described from the Brooke Army Hospital, Fort Sam Houston, Texas. Chloromycetin and sulphadiazine therapy effected some improvement, but the head and pharynx became oedematous, and the left side of the face gangrenous, before death. At autopsy the central nervous system was found to be infected and thrombosis had developed in the internal carotid artery. Innumerable coarse, non-septate, fungal hyphae were found in all the affected parts, but no cultures were obtained.

1076. Mackinnon (J. E.), Artagaveytia-Allende (R. C.), & Arroyo (L.). **Micosis profundas endémicas. Nuevas orientaciones y adquisiciones clínicas. Importancia del problema en el Uruguay.** [Deep endemic mycoses. New clinical view-points and discoveries. Importance of the problem in Uruguay.] —*An. Fac. Med. Montevideo*, 38, 11–12, pp. 428–445, 1 map, 1953. [English summary.]

In tests at the Institute of Hygiene, Montevideo, Uruguay, 11·1 per cent. of 916 persons suffering from severe deep mycoses reacted to histoplasmin. There was a case of multiple disseminated pulmonary calcifications in one reactor but this patient also reacted to tuberculin. Coccidioidomycosis (*Coccidioides immitis*) does not yet occur in Uruguay. Eleven out of 537 persons reacted to paracoccidioidin (a filtrate of cultures of *Paracoccidioides brasiliensis*) [1, No. 1875]; eight were non-specific reactions in persons sensitized to *Histoplasma capsulatum* [1, No. 1896]. The presence of non-evolutive forms of South American blastomycosis is discussed and the need for studies in limited but well-chosen localities is emphasized. Strong reactions to 1:1,000 sporotrichin were obtained with two out of 50 persons and in four patients suffering from sporotrichosis (*Sporotrichum schencki*) [1, No. 1976].

1077. Andleigh (H. S.). **Mycetoma foot. Etiology and laboratory diagnosis.**— *Indian J. med. Sci.*, 8, 9, pp. 631–634, 1 pl., 1954.

Of the 22 cases of mycetoma studied 16 could be diagnosed from the passing of granules in the suppurative discharge, 14 passing black granules, and two yellowish-white. About 27 per cent. of the cases of mycetoma studied were of the actinomycotic type and curable by local excision of the affected tissues and administration of large doses of sulphadiazine and penicillin. Amputation is not necessary.

1078. Courtois (C.), De Loof (C.), Thys (A.), & Vanbreuseghem (R.). **Neuf cas de pied de madura congolais par Allescheria boydii, Monosporium apiospermum et Nocardia madurae.** [Nine cases of Madura foot in the Congo caused by *Allescheria boydii*, *Monosporium apiospermum*, and *Nocardia madurae*.]— *Ann. Soc. belge Méd. trop.*, 34, 4, pp. 371–395, 14 pl., 1954. [Flemish summary.]

Details are given of the clinical, radiological, histopathological, and mycological features of nine cases of Madura foot among natives of the Belgian Congo (eight male and one female) in the region of Opala, apparently the first definitely reported from the Congo. *Allescheria boydii* or its conidial form *Monosporium apiospermum* were isolated in five cases and two others were caused by strains of *Nocardia madurae*. The last two were diagnosed only by histopathological techniques. In three cases treatment with pentamidine gave temporary relief.

1079. Moise (R.). **Le maduromicosi in Somalia; studio anatomopatologico.** [Maduromycoses in Somalia; an anatomo-pathological study.]—*Ann. Med. nav. colon.*, 57, 4, pp. 435–442, 8 figs., 1952.

Basing himself upon a study of 16 cases of maduromycosis in Somalia, the author presents a succinct account of the main anatomical and pathological features of the disease. The morphology of the fungous granules present in the tissues differs in the different cases, and the histological picture is so variable that the causal species cannot be related to it.

1080. Moore (M.). **Mycetoma of the hand and arm caused by Madurella. Report of a case with a review of the literature.**—*Amer. J. trop. Med. Hyg.*, 3, 2, pp. 303–325, 6 figs., 1954.

This is a report from the Barnard Free Skin and Cancer Hospital, St. Louis, Missouri, of a case of mycetoma of the right hand and forearm of 15 years' standing in a negro patient. Pus exuded from the multiple sinuses contained dark brown granules and on Sabouraud's glucose agar greyish hyphae developed in three days, later turning yellow to yellowish-brown; the organism was identified as a species of *Madurella* presenting close analogies with *M. ikedae* [*M. americana*: 1, No. 1727]. The arm was amputated after the condition had failed to respond to penicillin, terramycin, or iodides. The condition had spread widely through all the tissues, causing fibrosis with chronic inflammation, accompanied by a large number of new capillaries and much infiltration, containing macrophages and giant cells in the early stages and polymorphs and fibroblasts in the later ones.

A full description of the morphological and cultural characters of the fungus is given. The confused state of present knowledge is discussed with reference to current studies directed towards clarifying the position.

Attention is drawn to the rarity of the disease in the upper limb, this being only the fourth record of infection of the hand or arm in the world and the first in a negro of the United States.

1081. Negroni (P.) & Vučetich (M.). **Micetoma maduromicótico por Madurella mycetomi.** [Maduromycotic mycetoma caused by *Madurella mycetomi*.]—*Rev. Inst. bact., B. Aires*, 15, 2, pp. 106–112, 3 pl., 1950–1953. [French and English summaries.]

Details are given of the mycological characteristics of a new case of black granular maduromycotic mycetoma of the foot caused by *Madurella mycetomi* [1, No. 85; 2, No. 93] in a 38-year-old native of Argentina.

1082. Moral García (J. L.). **Rinosporidiosis de la conjunctiva.** [Rhinosporidiosis of the conjunctiva.]—*Rev. Ecuator. Ent. Parasit.*, 1, 4, pp. 113–122, 1 pl., 1953. [English summary.]

After reviewing the history of rhinosporidiosis (*Rhinosporidium seeberi*) [1, No. 1213] on man and animals the author describes the first case in Ecuador, involving the conjunctiva of a 40-year-old farmer at the Luiz Vernaza Hospital, Guayaquil. Of the 506 cases reported in the literature only 81 occurred in this site.

1083. Martin-Scott (I.). **Onychomycosis caused by Scopulariopsis brevicaulis.**—*Trans. Brit. mycol. Soc.*, 37, 1, pp. 38–43, 1 pl., 1 fig., 1954.

The author recapitulates briefly the clinical features of onychomycosis and the fungi generally responsible and describes fully the features of the current case, the first in Great Britain, involving the right large toe-nail and to a lesser extent the other nails of the foot in a 32-year-old housewife, in which *Scopulariopsis brevicaulis* [1, No. 1975; 2, No. 1112] was the sole pathogen. The nail was opaque and yellow, thickened at the distal end, and friable and chalky on

the under surface. This part repeatedly yielded *S. brevicaulis* in pure culture at all sites of inoculation. The nail plate was removed in June 1951 and fungicidal treatment was given [cf. 1, No. 2308], but nevertheless the new nail was also infected. Further evidence of pathogenicity was adduced from the facts that: the fungus was isolated only from the diseased nail, it grew on moist keratin alone, typical spores were observed within the keratin, no other established pathogenic fungus was cultured from the infected nail to account for the onychomycosis, and other possible causes of deformity were excluded on clinical grounds.

1084. Gauvreau (L.) & Grandbois (J.). **Us cas de mycose cutanée causée par un champignon de l'ordre des arthrospores.** [A case of cutaneous mycosis caused by a fungus of the order of arthrospores.]—*Laval méd.*, 19, 1, pp. 59–67, 4 figs., 1954.

At the Hôpital du Saint-Sacrement, Quebec, Canada, the authors isolated from a suppurating lesion on the right wrist of a 59-year-old farmer a fungus provisionally assigned to the genus *Geotrichum* under the name of *G. spheroides*. On solid or liquid media it produces a mycelium consisting of septate, branching hyphae, which gradually disintegrate into rectangular arthrospores, rapidly becoming spherical and attaining a diameter of 6 to 9 μ in old cultures, when they are liberated in chains and give rise by budding to septate, branched hyphae. The fungus was non-pathogenic to laboratory animals. The infection was successfully treated by radiotherapy.

1085. Bieberdorf (F. W.). **A rapid technique for detecting the presence of fungi in skin scrapings, hairs, other tissues, and exudates.**—*Rep. U.S. Air Force Sch. Aviation Med.* 1, pp. 1–5, 1 fig., 1953.

A description is given of the development and employment at the United States Air Force School of Aviation Medicine, Randolph Field, Texas, of a method for staining hairs, exudates, and skin scrapings, using an aqueous solution of Pontamine Sky Blue which was found to be compatible with sodium and potassium hydroxide, did not precipitate from the stained material, and persisted indefinitely.

1086. Kimmig (J.) & Rieth (H.). **Antimykotica in Experiment und Klinik.** [Antimycotics in experimental and clinical studies.]—*Arzneimittelforsch.*, 3, 6, pp. 267–276, 3 figs., 1953. [Abs. in *Excerpta med., Amst.*, Sect. XIII, 8, 2, pp. 80–81, 1954.]

This is a critical analysis, supplemented by 250 bibliographical references, of old-established and new remedies for dermatomycoses, references to many of which have appeared from time to time in this *Review*. Among the latest developments may be mentioned the discovery of highly active quaternary ammonium [1, No. 2365] and arsonium bases; nephiroles (a not exactly defined mixture of various ammonium bases); and organic mercury compounds with special reference to N_1-ethyl mercury albucid, which is stated to be inhibitory at a concentration of 1 in 1,000,000, an effective fungistatic dilution not hitherto reached by any other compound.

1087. Steigleder (G. K.). **Mykose mit varioliformem nekrotisierendem Mykid nach Trichophytin-Injektion.** [Mycosis with varioliform necrotizing mycid after trichophytin injection.]—*Hautarzt*, 4, 1, pp. 35–36, 4 figs., 1954.

A most unusual case of trichophytid is reported from the University Skin Clinic, Frankfurt-am-Main, Germany. It consisted in the development on the face and body of a 19-year-old male, who had been suffering for two years from

seborrheic eczema, of irregularly distributed, circular to oval, up to lentil-sized, sharply delimited papules following application of the trichophytin test to the right and left upper arms at dilutions of 1 in 50 and 1 in 100, respectively.

1088. Friedhoff (Frances W.) & Rosenthal (S. A.). **A simple method for preparing homogeneous suspensions of dermatophytes and for estimating the number of viable particles in these suspensions.**—*J. invest. Derm.*, 23, 3, pp. 155–162, 5 figs., 1954.

Studies at the New York University Post-Graduate Medical School showed that grossly homogeneous suspensions of the mycelia of dermatophytes could be obtained by stirring pieces of mycelium in saline solution in a test-tube with an electrically rotated bent glass rod which traversed the thick gauze covering of the tube. The whole unit was easily sterilized by autoclaving. The resultant suspension contained small clumps of mycelium and individual hyphae of varying lengths, but colony counts on measured samples spread on agar plates revealed a very even distribution of viable fragments throughout the suspension.

1089. Polemann (G.) & Scharfenberger (R.). **Experimenteller Hahnenkamm-Trichophytie als antimykotisches Testobjekt.** [Experimental Cock's comb trichophytosis as an antimycotic test object.]—*Dermatologica, Basel*, 109, 3, pp. 137–142, 4 figs. (3 col.), 1954. [English and French summaries.]

Very satisfactory results were obtained at the Skin Clinic of Cologne University, Germany, in the experimental production of lesions by *Achorion* [*Trichophyton*] *quinckeanum*, *T. gypseum* [*T. mentagrophytes*], *Microsporum gypseum*, and *T. gallinae* [1, No. 2365], especially the last-named, on cock's combs for purposes of anti-mycotic evaluation. A further advantage of the use of cocks is the simplicity of intravenous injections in the wing vessels.

1090. Porto (J. A.). **The use of cellophane tape in the diagnosis of tinea versicolor.**—*J. invest. Derm.*, 21, 4, pp. 229–231, 2 figs., 1953.

The diagnosis of tinea versicolor (*Malassezia furfur*) was facilitated in studies on material from nine patients at the Department of Dermatology, University of Michigan Medical School, by the use of Scotch (cellophane) tape [cf. next entry]. The sticky side of a 1-in. wide piece is gently pressed on the suspected lesion, immediately removed, and pressed on a clean, oil-free microscope slide. A repetition of the procedure on the same lesion results in clearer and thinner specimens. By this method the spores and hyphae of *M. furfur* may be examined with a minimum of distortion as compared with potassium hydroxide preparations.

1091. Vanbreuseghem (R.) & Doupagne (P.). **Morphologie parasitaire de l'agent de pityriasis versicolor : Malassezia furfur.** [Parasitic morphology of the agent of pityriasis versicolor: *Malassezia furfur*.]—*Ann. Soc. belge Méd. trop.*, 34, 2, pp. 251–254, 1954. [Flemish summary.]

The phialid reproductive system of *Malassezia furfur* is described from material originating in the Belgian Congo [1, No. 2490] and studied at the Prince Leopold Institute of Tropical Medicine, Antwerp, by the Scotch tape method [cf. preceding entry].

1092. Slaughter (H. W.). **Asterol treatment of superficial fungus infections.**—*J. med. Ass. Ala.*, 22, 6, pp. 147–149, 1952.

Of 50 patients treated at Mobile, Alabama, for superficial mycoses with

5 per cent. asterol tincture in 70 per cent. isopiropyl alcohol or 5 per cent. asterol ointment, or both, 44 (88 per cent.) were discharged as cured and two were definitely improved. The causal fungi were *M[alassezia] furfur*, *M[icrosporum] lanosum* [*M. canis*], *T[richophyton] gypseum* [*T. mentagrophytes*], *T. rubrum*, and *C[andida] albicans*.

1093. Chattaway (F. W.) & Barlow (A. J. E.). **The fluorescent materials produced in vivo by certain dermatophytes.**—*J. gen. Microbiol.*, 11, 3, pp. 506–511, 2 pl., 1954.

A joint study was made between the Department of Biochemistry, University of Leeds, and the Department of Dermatology, Royal Infirmary, Huddersfield, of the fluorescent materials extracted with dilute ammonia from human hair and cat's hair infected with *Microsporum canis*, *M. audouini* [2, Nos. 592, 593], and *Trichophyton schoenleini*. It was demonstrated by paper chromatography and electrophoresis that the principal fluorescent material was common to all these infections and that further fluorescent substances were present in the extract from *T. schoenleini* infections. The pure substances could not be isolated, largely owing to the minute amounts available.

1094. Carlier (Gwendoline I. M.). **An eight-year survey of the ringworm flora of Birmingham.**—*J. Hyg.*, 52, 2, pp. 264–271, 3 diags., 2 graphs, 1954.

A marked increase in the number of cases of tinea due to fungi of animal origin was demonstrated in a survey of Birmingham covering the period from 1st January, 1945, to 31st December, 1952. The main reservoir of infection in the city is centred on Sparkbrook and Balsall Heath, with a rather smaller focus in the Hockley–Lozells area. Of the five species common to man and animals, *Microsporum canis* was responsible for 508 cases, *M. gypseum* for one, *Trichophyton mentagrophytes* for 121, *T. flavum* for 20, and *T. discoides* for seven, a total of 657. Of the 287 cases caused by species peculiar to man, 253 were due to *M. audouini*, six each to *T. rubrum* and *T. schoenleini*, two each to *T. sabouraudi* and *T. sulphureum*, three to *T. violaceum*, one to *T. tonsurans*, and 14 to *Epidermophyton floccosum* (mostly confined to ex-Service personnel and their contacts).

1095. Dey (N. C.). **A review of ringworm of the hair in India.**—*Indian med. Gaz.*, 88, 4, pp. 194–196, 1953.

A study is reported of the examination records for tinea of the scalp, beard, and lanugo hair of 215 patients, mainly from European hill station boarding schools, attending the skin out-patient department of the School of Tropical Medicine, Calcutta, during the period 1932–41 and occasional records down to 1952. The first-named was the most prevalent. The fungi isolated, in order of frequency, were *Microsporum audouini* [1, No. 384] (43·7 per cent.), *Trichophyton violaceum* [1, Nos. 1237, 1241] (37·6), *M.* [*T.*] *ferrugineum* (3·7), *T. crateriforme* [*T. tonsurans*: 1, No. 615] (3·3), and *T. gypseum* [*T. mentagrophytes*: 1, No. 1489] and *T. violaceum* var. *indicum* (0·93 per cent.). Ten samples of favus caused by an unclassified species of *Achorion* were received from Kashmir.

1096. Muzzetto (M.). **Note sulla campagna di eradicazione delle tigne nella provincia di Nuoro.** [Note on the campaign for the eradication of tineas in the province of Nuoro.]—*Ann. Sanita. pubbl.*, 13, 4, pp. 1107–1118, 1952. [French, English, Spanish, and German summaries.]

Details are given of a campaign for the control of tinea [unspecified] carried

out in Nuoro, a province of 250,000 inhabitants, the poorest in Sardinia and one of the poorest in Italy. A preliminary survey shortly after the end of the war showed that 48 of 99 communes were affected, there being at that time 453 infected children in all. There was no dermatological clinic and no medical specialist in the whole province. The method followed was to track down every case of infection, establish a clinic for diagnosis and a treatment centre, and to secure financial assistance from official quarters. The province was divided into sectors according to the amount of infection present in each area, the sector most severely affected being treated first. This plan was put into effect in 1951, and by March 1952, 712 children up to 18 years of age had been cured. It is hoped that the disease will soon be completely eradicated from the province.

1097. Fuentes (C. A.), Aboulafia (R.), & Vidal (R. J.). **A dwarf form of Microsporum gypseum.**—*J. invest. Derm.*, 23, 1, pp. 51–62, 10 figs., 1954.

A new variety of *Microsporum gypseum*, designated *M. gypseum* var. *nana* because of the small size of its pyriform macrospores, is described from a scale lesion in an eight-year-old boy at the Mercedes Hospital, Havana, and was later found again in a skin lesion in another patient at the Calixto Garcia Hospital. Except for the size of the spores, the strain conforms in all respects with descriptions of *M. gypseum* (which has previously been isolated only five times in Cuba) and is capable of breaking down keratinized tissues *in vitro*. In the original lesion invasion of the hairs was of the favic type with no external spore sheath and there was a pale green fluorescence under Wood's light. Inoculation of a human volunteer and of a guinea-pig resulted in typical ringworm lesions of the skin, but in no case could invasion of the hairs be detected.

1098. Bereston (E. S.). **The vitamin, amino acid and growth requirements of the genus Microsporum.**—*J. invest. Derm.*, 20, 6, pp. 461–470, 1953.

Investigations at the Johns Hopkins Hospital, Baltimore, Maryland, showed that when asparagine, ammonium nitrate, and casein hydrolysate were used as sources of nitrogen, neither *Microsporum canis* nor *M. gypseum* needed additional vitamins, but that *M. audouini*, autotrophic for vitamins when grown on the first two compounds, showed a deficiency for thiamin on casein hydrolysate. Neopyrithiamin, an antagonist of thiamin, was found to inhibit *M. audouini*, but the inhibition could be reversed by supplying thiamin.

The nitrogen requirements of all species were adequately supplied by histidine, arginine, glycine, lysine, valine, cystine, aspartic acid, ammonium sulphate, ammonium nitrate, casein hydrolysate, peptone, and asparagine, and for *M. canis* and *M. gypseum* only by serine and phenylalanine. Other amino-acids resulted in submaximal growth, while hydroxyproline inhibited all three species, though the inhibition could be reversed by proline, asparagine, and casein hydrolysate.

1099. Strauss (J. S.) & Kligman (A. M.). **Distribution of skin doses over scalp in therapy of tinea capitis with superficial X-rays.**—*Arch. Derm. Syph., Chicago*, 69, 3, pp. 331–341, 5 figs., 1954.

The effect of overlap of radiation in the Adamson-Kienböck technique for the treatment of tinea capitis [2, No. 867] was considered as a possible danger of permanent damage to the hair. The amount of irradiation received by different areas of the skin was measured on a dummy and there was found to be an

adequate safety margin provided the epilation was performed by experienced staff with well-calibrated equipment.

1100. Rosenthal (M. W.), Daeschner (C. W.), & Fahlberg (W. J.). **Clinical evaluation of di-paralene in the management of tinea capitis.**—*J. invest. Derm.*, 23, 2, pp. 119–122, 1954.

The results of tests at the Jefferson Davis Hospital, Houston, Texas, with an antihistaminic drug, di-paralene (chlorocyclizine hydrochloride) [2, No. 410], showed that only eight out of 29 children with tinea capitis caused by *Microsporum audouini*, *M. canis*, *Trichophyton rubrum*, or *T. schoenleini* were clinically cured.

1101. Chattaway (F. W.), Thompson (C. C.), & Barlow (A. J. E.). **Enzymes of Microsporum canis.**—*Biochim. biophys. Acta*, 14, 4, pp. 583–584, 1954.

The enzymatic activity of *Microsporum canis* mycelium grown in shake culture, macerated in a press, and suspended in phosphate buffer, was determined in experiments with the Warburg apparatus reported in this joint contribution from the University, Leeds, and the Royal Infirmary, Huddersfield. Glucose, succinate, citrate, pyruvate, and acetate were oxidized, succinate oxidation, however, being completely inhibited by malonate. Oxaloacetate decarboxylase, amino acid oxidase, and alkaline phosphatase activities were demonstrated.

1102. Ungerman (A. H.) & Ungerman (M. S.). **Toxic encephalopathy occurring during topical treatment for tinea capitis.**—*J. Okla. St. med. Ass.*, 46, 11, pp. 304–307, 2 graphs, 1953.

Particulars are given of two cases of neuropsychiatric disturbance in related children, a boy aged $4\frac{1}{2}$ and a girl, $3\frac{1}{2}$, in the course of topical treatment with 5 per cent. asterol and a salicylic acid-sulphur ointment for tinea capitis (*Microsporum audouini*) [cf. 2, No. 421] at Tulsa, Oklahoma.

1103. Wesener (G.). **Die Mikrosporie, ihre Behandlung und soziale Bedeutung.** [Microsporosis, its treatment and social significance.]—*Dtsch. Gesundheitswes.*, 7, 42, pp. 1315–1322, 10 figs., 1952. [Russian summary.]

This is a report from the Municipal Skin Clinic, Gera, on three independent outbreaks of microsporosis (*Microsporum audouini*) in central Germany, one of which was not recognized for two years. X-ray and thallium epilation combined with subsequent topical anti-mycotic treatment is recommended. Doctors in the East German Republic are urged to familiarize themselves with the symptoms of the complaint so that control measures may be promptly instituted. On account of the high degree of infectiousness, the difficulty of therapy, mostly necessitating lengthy clinical treatment, and the associated economic and social problems, it is argued that microsporosis should be made a notifiable disease.

1104. Marples (Mary J.) & Chapman (E. N.). **Tinea capitis caused by Microsporum canis. Report of an outbreak in a Dunedin institution.**—*N.Z. med. J.*, 53, 294, pp. 158–162, 1954.

From the Departments of Microbiology and Preventive Medicine, University of Otago, the authors report a small outbreak of tinea capitis caused by *Microsporum canis* in a Dunedin institution. Eight of the ten resident children were infected. Evidence suggested that transmission from child to child had occurred within the Home where there was close contact between the children,

but examination of 92 contacts at the school attended by the infected children failed to demonstrate any transmission in this direction. It is suggested that children with *M. canis* infection should be allowed to attend school provided they are receiving adequate treatment and wear tightly fitting washable caps.

1105. Reiss (F.), Caroline (Leona), & Leonard (Louise). **Experimental Microsporum lanosum infection in Dogs, Cats, and Rabbits. I. Observations on the course of the primary infection.**—*Trans. N.Y. Acad. Sci.*, Ser. II, 16, 5, pp. 277–280, 1954.

In the experiments described in this joint report from the New York University Post-Graduate Medical School and Bellevue Hospital, New York, infection of nine-week-old rabbits by *Microsporum lanosum* [*M. canis*] presented marked individual variations in contrast to the much more uniform reactions of the new-born, which are therefore recommended for the assay of anti-fungal remedies. A peculiar feature in both groups was the gradual shifting of fluorescence to the tips of the hair.

Cultures of the fungus induced a stronger response in dogs than infected hair. The mean fluorescence was uniform in all the animals. Positive cultures were obtained after 133 days in one of the mongrels and after 112 in a Chihuahua puppy.

Cats and kittens, including Siamese, developed fairly widespread, progressive infection, in some cases involving the perioral area. The maximum period of fluorescence (251 days) occurred in a female Siamese kitten.

1106. Fuentes (C. A.), Bosch (Zilia E.), & Boudet (C. C.). **Occurrence of Trichophyton mentagrophytes and Microsporum gypseum on hairs of healthy cats.**—*J. invest. Derm.*, 23, 5, pp. 311–313, 4 figs., 1954.

In studies at the University of Havana School of Medicine, Cuba, *Microsporum gypseum* and *Trichophyton mentagrophytes*, respectively, were isolated from the nape hairs of two out of 26 healthy, young cats examined. The hairs showed no microscopic evidence of infection and did not fluoresce under Wood's light.

1107. Whittle (C. H.). **A small epidemic of Microsporum gypseum ringworm in a plant nursery.**—*Brit. J. Derm.*, 66, 10, pp. 353–356, 1954.

From the Skin Department, United Cambridge Hospitals, the third report in recent years in Great Britain [1, No. 1971] is presented of an outbreak of *M[icrosporum] gypseum* ringworm, involving four men and four women working in a carnation nursery in Herefordshire in 1951. Other sporadic cases occurred later, and in 1954 there was a further outbreak involving 13 people. The lesions appeared to regress spontaneously after about five weeks. Close association at work, and sometimes at home, made it probable that the disease was spread from patient to patient. Other possible sources were canes imported from China or Indo-China, and the soil itself [2, No. 600].

1108. Sharon (N.), Pinsky (A.), Turner-Graff (R[uhama]), Babad (J.), & Cercos (P.). **Classification of the antifungal antibiotics from Bacillus subtilis.**—*Nature, Lond.*, 174, 4443, pp. 1190–1191, 1954.

In the course of this joint contribution from the Dairy Research Laboratory, Agricultural Research Station, Rehovot, Israel, and the Institute of Microbiology, Buenos Aires, Argentina, a comparison was made of the antibiotic

properties of three of the nine substances yielded by *Bacillus subtilis* [1, Nos. 1265, 1796]. Substance I (bacillomycin R) completely inhibited the growth of *Epidermophyton inguinale* [*E. floccosum*] at 25 to 50 μgm. per ml.; *T. rubrum* and *T. violaceum* at 50 to 100 μgm., and *T. mentagrophytes* and *C. albicans* at 100 to 200 μgm. per ml., II (bacillomycin) inhibited *E. floccosum* and *T. violaceum* at 50 to 100 μgm. per ml., and III (fungocin or bacillomycin A) that of *E. floccosum*, *Trichophyton rubrum*, *T. violaceum*, and *Candida albicans* at 25 to 50 μgm. per ml.

1109. Blank (F.) & Craig (G. E.). **Family epidemics of ringworm contracted from Cattle.**—*Canad. med. Ass. J.*, 71, 3, pp. 234–235, 3 figs., 1954.

Particulars are given of family epidemics of tinea (*Trichophyton discoides*) [2, No. 172] contracted from cattle on two farms, one in Ontario (with 14 cows infected) and the other in Quebec (five).

1110. Blank (F.), Byrne (J. L.), Plummer (P. J. G.), & Avery (R. J.). **Isolation of Trichophyton granulosum Sabouraud, 1909, from Chinchillas showing 'fur-slipping'.**—*Canad. J. comp. Med.*, 17, 10, pp. 396–402, 1953.

Studies carried out conjointly by the Animal Diseases Research Institute, Hull, Quebec, and the Department of Bacteriology and Immunology, McGill University, Montreal, showed that 'fur-slipping' in chinchillas is due to *Trichophyton granulosum* [2, No. 144], which was isolated repeatedly from skin swabs, scrapings, and hairs.

1111. Fischer (G. W.). **Schuh- und Strumpfdesinfektion bei Epidermophytie.** [Shoe and stocking disinfection in epidermophytosis.]—*Hautarzt*, 3, 12, pp. 549–551, 1 fig., 1952.

At a dermatological clinic connected with the Justus Liebig Institute, Giessen, Germany, various proprietary dusts and solutions were tested for efficiency in the treatment of footwear against reinfection by *Epidermophyton* Kaufmann-Wolf [*Trichophyton interdigitale*] with unsatisfactory results. The best results were obtained by the insertion in the shoe of a cotton wool pad, 9 by 6 by 6 cm., soaked in 10 ml. formalin solution and then wrapping the shoe in an air-tight material, such as indiarubber or grease-proof paper, for 96 hours.

1112. Grimmer (H.). **Die Berliner Epidermophytien in den Jahren 1952–1954. (Vergleich mit den epidemiologischen Verhältnissen von 1939 und einigen anderen deutschen und ausländischen Statistiken).** [The Berlin epidermophytoses during the years 1952 to 1954. (Comparison with the epidemiological relations of 1939 and some other German and foreign statistics.)]—*Arch. Derm. Syph., Berl.*, 198, 4, pp. 363–374, 1954.

During the period from 1952 to 1954 *Epidermophyton* [*Trichophyton*] *interdigitale* was implicated in 95 cases of superficial dermatomycosis in Berlin (70·9 per cent.), *T. rubrum* in 38 (28·4), and *E. inguinale* [*E. floccosum*] in one (0·7), as compared with 68 (53·14), 45 (35·13), and 15 (11·71), respectively, in 1939. *T. rubrum* was responsible for 24 (40 per cent.), and *T. interdigitale* for 36 (60) of the 60 cases of onychomycosis observed. *Candida albicans* was isolated from 27 cases of superficial mycosis of the hands and feet and five involving the glabrous skin of other parts of the body, 23 of onychomycosis, and one of paronychia mycotica. Two cases of onychomycosis were associated with *Scopulariopsis brevicaulis* [cf. 1, No. 1974; 2, No. 1083], one with *Alternaria*, and three with *Aspergillus glaucus*.

Comparative statistics are cited from Hamburg, Upper Baden, Switzerland [1, No. 1973], and Great Britain and Northern Ireland [1, No. 1971].

1113. Gardenghi (G.). **Rilievi statistici e provvedimenti profilattici nel campo delle tigne flogistiche del rurale.** [Statistical data and prophylactic measures in the field of inflammatory tinea in rural areas.]—*Rass. med. industr.*, 22, 6, pp. 346–350, 1953.

Studies were made at Florence, Italy, from 1943 to 1947 and from 1948 to 1952 of 283 cases (over 90 per cent. of them male) of inflammatory ringworm brought on by contact with animals and caused chiefly by *Gypseum asteroides* [*Trichophyton mentagrophytes*: 1, No. 2203] and occasionally by *G.* [*T.*] *farinulentum* [1, No. 1009]; in 72 per cent. of the patients the hand and forearm were involved. There were 21 recoveries and 40 failures under treatment during the first period and 99 and 20, respectively, during the second, reflecting the lower degree of success in prophylactic and therapeutic measures during and immediately after the war. The higher recovery rate from 1948 to 1952 is attributed to a wider use of antibiotics.

1114. Vivancos (G.). **Estudio de la fluorescencia de los dermatofitos. Trichophyton mentagrophytes.**—[Study of the fluorescence of the dermatophytes. *Trichophyton mentagrophytes.*]—*Rev. Inst. bact., B. Aires*, 15, 2, pp. 149–153, 1950–1953.

Studies on the fluorescence of *Trichophyton mentagrophytes* cultures exposed to ultra-violet light and viewed through a Wood's filter [1, No. 583] confirmed the results of other authors concerning the loss of this property through pleomorphism. Violet, fluorescent crystals were obtained by extraction with acid solutions, 2 per cent. chlorhydrous alcohol, and water at pH 4.

1115. Georg (Lucille K.). **The relationship between the downy and granular forms of Trichophyton mentagrophytes.**—*J. invest. Derm.*, 23, 2, pp. 123–141, 5 figs., 1954.

On the basis of a thorough investigation, carried out at the Communicable Disease Center, Chamblee, Georgia, of the pathogenicity to man and animals and the cultural characters of the downy and granular forms of *Trichophyton mentagrophytes*, the author concludes that they are variants of one species and that the name *T. interdigitale* should be dropped. Experimental results indicated that the downy cultures are less virulent than the granular to guinea-pigs and dogs, while clinical data suggest that downy strains are more commonly isolated from chronic, low-grade infections in man and granular ones from acute, suppurative lesions, particularly those acquired from animals. The virulence of the downy culture may be enhanced by serial passage through guinea-pigs, and in two cases this change was accompanied by transformation to a granular-type culture.

1116. Silva (M.) & Benham (Rhoda W.). **Nutritional studies of the dermatophytes with special reference to the red-pigment-producing varieties of Trichophyton mentagrophytes.**—*J. invest. Derm.*, 22, 4, pp. 285–297, 4 figs., 1954.

Studies at the Columbia-Presbyterian Medical Center, New York, revealed some correlation between the type of lesion produced in man and animals by the downy and granular types of *Trichophyton mentagrophytes*, inflammatory lesions usually being caused by granular isolates, often of animal origin, while the chronic form is more often due to downy strains passed directly from man to man. In liquid culture the granular strains produced a red pigment. They

grew luxuriantly with an inorganic nitrogen source, whereas the downy isolates required organic nitrogen for optimum development. Pigmentation in all isolates varied with the amino-acid supplied. The experimental infection of guinea-pigs showed that the granular strains were far more virulent than the downy ones.

1117. Newcomer (V. D.), Wright (E. T.), & Sternberg (T. H.). **A study of the host-parasite relationship of Trichophyton mentagrophytes and T. rubrum when introduced into the granuloma pouch of rats.**—*J. invest. Derm.*, 23, 5, pp. 359–367, 3 plates, 1954.

Investigations at the General Medical and Surgical Hospital, and the University of California Medical Center, Los Angeles, California, into the survival of *Trichophyton mentagrophytes* and *T. rubrum* inoculated into granuloma pouches formed between the shoulder-blades of rats by the introduction of air alone, or with croton oil or hydro-cortisone, showed that from two of the 40 treated animals *T. mentagrophytes* could be reisolated after 40 days, and in three the fungus had become disseminated to the liver and spleen. Staining methods indicated that a large percentage of the fungi died shortly after inoculation into the pouch and that the polymorphonuclear leucocyte was the predominant cell found in association with the dying elements. Surviving fungi proliferated by means of hyphal elements, and terminal and intercalary spores were formed.

1118. Vanbreuseghem (R.), Tritsmans (E.), & Van der Meiren (L.). **Mutation compliquant l'identification d'un dermatophyte: Ctenomyces asteroides.** [Mutation complicating the identification of a dermatophyte: *Ctenomyces asteroides.*]—*Arch. belg. Derm. Syph.*, 10, 1, pp. 142–151, 1954. [Flemish and English summaries.]

From the Prince Leopold Institute of Tropical Medicine, Antwerp, Belgium, the authors report the isolation of a dermatophyte from a purplish-red nodule which developed on the wrist of a 24-year-old male, a packer by trade, following an injury sustained in handling straw used for wrapping. By means of inoculation tests on guinea-pigs and culture on hairs *in vitro* the fungus was identified as a *Trichophyton* of the *microides* group. On Sabouraud's glucose agar it gave rise to a white, powdery mutant, contrasting with the normal smooth, reddish-brown colonies, which was readily identifiable as *Ctenomyces asteroides* [*T. mentagrophytes*]. It is postulated that this change actually represented a retromutation, the original mutation having been induced by the transition from the saprophytic to the parasitic phase.

1119. Janke (D.). **Streptomycosis (Streptomyces albus) subcutanea fistulosa mit aphlegmatischer, herdformig generalisierter Epidermophytie (Epidermophyton rubrum Castellani).** [Streptomycosis (*Streptomyces albus*) subcutanea fistulosa with aphlegmatic, localized epidermophytosis (*Epidermophyton rubrum* Castellani).]—*Hautarzt*, 5, 1, pp. 39–41, 7 figs., 1954.

A 51-year-old patient at the University Skin Clinic, Marburg a. d. Lahn, Germany, suffering since the Russian campaign of 1942 from generalized infection by two variants of *Epidermophyton* [*Trichophyton*] *rubrum*, in 1946 developed subcutaneous, fistulous streptomycosis (*Streptomyces albus*), originating in the left groin and spreading over the abdomen. The finger-nails became involved in 1946. Six shock treatments of 30 gm. each with novex [2, No. 897] completely cured the streptomycosis, but local therapy was not entirely effective against *T. rubrum*, a slight recurrence of which was observed after three months.